A Brief Bibliography of Publications about the Kepler Conjecture

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face [GJT12]. **face-centered-cubic** [GJT12]. **false** [HKRS23]. **Families** [GJT12]. **Family** [TJ09a, Ano97, Mus97, Mus98, TJ10b]. **famous** [Cas01]. **Faster** [Epp97]. **FCC** [BW01, EIH18, Sch00]. **feedback** [Sah06]. **Ferguson** [TL06, Lag11b, Oes00, VG01]. **field** [Zau16]. **fill** [Sen81]. **Filling** [PAHG12, Str28, Rén58]. **fine** [KGT15]. **fine-grid** [KGT15]. **Finite** [AMB11, BW01, BS01, BH98, BBC98, B¨04, PKC16, TGW89, Lep97]. **finiten** [Lep97]. **first** [Bra95]. **Five** [Lee67a, Cas01]. **Flat** [KOT22]. **flows** [BLR10]. **fluids** [ZBT$^+$99]. **Flyspeck** [NBS06, Ada14, NBS07, ON09, TKUG13]. **Flyspecking** [Ada14]. **Foams** [Kla00]. **force** [Zau16]. **foreword** [TL06]. **Formal** [BB14, Hal08, Hal12, Har08, TKUG13, HAB$^+$15]. **Formalizing** [Hal04]. **Formally** [AH14]. **formation** [Hsi01]. **forms** [CT22, Tom20]. **formulas** [CKM$^+$19]. **formulation** [HF06]. **Fortran** [BDH$^+$05]. **four** [vMFC09]. **four-dimensional** [vMFC09]. **Free** [MT02a]. **French** [Ber93, Oes00]. **frictionless** [SAF10]. **Frobenius** [Per02]. **front** [LTÜ00]. **frustration** [vMFC09]. **Function** [Kla19, DS95]. **Functions** [HSP00, AGMW13, Ano97, Kla19, Mus97, Mus98]. **future** [Bai24].

game [Gar01a]. **garden** [Fea10]. **Gardner** [Fea10]. **gehalten** [Hil00, Hil01]. **Generalization** [BH01, Che13]. **Generalized** [Gav08]. **generate** [LRCG16, MT13]. **generation** [TS01]. **generative** [Hal01b]. **Generators** [Mar85]. **Genus** [Kel06, Kel04]. **Geometrical** [vMFC09, HL03]. **Geometry** [ACM01, GW93, Zon06, dGMMD14, BR07, Gar01a, Gav08, Gru07, Hsi93a, Hsi94, ZD96]. **geometry-based** [Gav08]. **Georgia** [Bil85]. **Geräumigkeitsbedingungen** [Mát93]. **German** [Gar12, Gro62, Hen98, HZ00, Hil00, Hil01, Lep97, Mát93, Min04, MPS02, SvdW53, Tót53, Tót72]. **gitterförmige** [Gro62, Min04]. **Glamorgan** [IEE07]. **Global** [HKRS23]. **Globally** [PKC16]. **golden** [HST10]. **Graphs** [BS01, JS00, Kel06, ABGGN16, Hal06d, Kel04, NBS06, NBS07]. **Grassmann** [BN00, BN02, BN05, Hen05]. **greatest** [Szp03a]. **grid** [KGT15]. **Groups** [CS$^+$88, BKK24, CS$^+$93, CS99, MPS02, Szi93, Tho79, Tho83]. **growth** [Gar12]. **Guest** [TL06].

Hale [Mor05]. **Hales** [TL06, Ano20a, Bai24, Hsi95, Jos12, Lag11b, Oes00, Ste99, VG01]. **Hamming** [RZ12]. **Handbook** [GW93]. **Hard** [AM07, AGM08, MT02a, RT98, BCR83, Bal11, DTSC04, DTS05a, DTS05b, DCST07, HAEG11, PZ06, TS01, TUS06, TS10a, TS10b, TJ12, ZBT$^+$99, vMFC09]. **hard-particle** [TS01, TS10a, TS10b]. **Hard-sphere** [RT98, DTSC04, ZBT$^+$99]. **HCP** [Sch00]. **held** [CAL$^+$13, Hil00, Hil01]. **helfen** [Gar12]. **Help** [Ano99, Gar12]. **helped** [Szp03a]. **heuristic** [LTX$^+$13]. **Heuristics** [SBH07]. **hexagonal** [BS13]. **high** [SST08, SDST06, TUS06]. **high-dimensional** [SDST06]. **Higher** [Max91, HM05, Lee64, SBG04]. **highly** [Kla19]. **Hilbert** [Jos12]. **Historical** [Hal06a]. **history** [Szp03a, Wea99]. **HOL** [Har13, KU13, Obu05].

Zeta [HSP00]. **Zur** [Lep97].

References

Angel:2016:BPG

[ABGGN16] Omer Angel, Martin T. Barlow, Ori Gurel-Gurevich, and Asaf Nachmias. Boundaries of planar graphs, via circle packings. *Annals of Probability*, 44(3):1956–1984, May 2016. CODEN APBYAE. ISSN 0091-1798 (print), 2168-894X (electronic). URL `http://projecteuclid.org/euclid.aop/1463410036`.

ACM:2001:PSA

[ACM01] ACM, editor. *Proceedings of the seventeenth annual Symposium on Computational Geometry (SCG'01): June 3–5, 2001, Medford, Massachusetts, USA*. ACM Press, New York, NY 10036, USA, 2001. ISBN 1-58113-357-X. LCCN ????

ACM:2004:PAA

[ACM04] ACM, editor. *Proceedings of the 36th Annual ACM Symposium on the Theory of Computing: Chicago, Illinois, USA, June 13–15, 2004*. ACM Press, New York, NY 10036, USA, 2004. ISBN 1-58113-852-0. LCCN QA75.5 .A22 2004.

Adams:2014:FF

[Ada14] Mark Adams. Flyspecking Flyspeck. In Hong and Yap [HY14], pages 16–20. ISBN 3-662-44198-5, 3-662-44199-3 (e-book). LCCN QA76.95.

Ambrus:2006:NLB

[AF06] G. Ambrus and F. Fodor. A new lower bound on the surface area of a Voronoi polyhedron. *Periodica Mathematica Hungarica*, 53 (1-2):45–58, 2006. CODEN PMHGAW. ISSN 0031-5303.

Anikeenko:2008:SDS

[AGM08] Alexey V. Anikeenko, Marina L. Gavrilova, and Nikolai N. Medvedev. Shapes of Delaunay simplexes and structural analysis of hard sphere packings. In Gavrilova [Gav08], pages 13–45. ISBN 3-540-85125-9. ISSN 1860-949X. LCCN QA278.2 .G46 2008ebeb; QA278.2 .G46 2008eb; QA278.2; QA278.2 .G46 2008.

Allamigeon:2013:CBN

[AGMW13] Xavier Allamigeon, Stéphane Gaubert, Victor Magron, and Benjamin Werner. Certification of bounds of non-linear functions:

the templates method. In Carette et al. [CAL+13], pages 51–65. ISBN 3-642-39319-5 (paperback), 3-642-39320-9 (e-book). LCCN QA76.9.M35 I58 2013.

Akeda:1975:NTP

[AH75] Y. Akeda and M. Hori. Numerical test of Palásti's conjecture on two-dimensional random packing density. *Nature*, 254(5498):318–319, March 27, 1975. CODEN NATUAS. ISSN 0028-0836 (print), 1476-4687 (electronic). URL http://www.nature.com/nature/journal/v254/n5498/pdf/254318a0.pdf.

Avigad:2014:FVM

[AH14] Jeremy Avigad and John Harrison. Formally verified mathematics. *Communications of the ACM*, 57(4):66–75, April 2014. CODEN CACMA2. ISSN 0001-0782 (print), 1557-7317 (electronic).

Amir:2001:CPM

[AL01] Amihood Amir and Gad M. Landau, editors. *Combinatorial pattern matching: 12th annual symposium, CPM 2001, Jerusalem, Israel, July 1–4, 2001: Proceedings*, volume 2089 of *Lecture Notes in Computer Science and Lecture Notes in Artificial Intelligence*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2001. CODEN LNCSD9. ISBN 3-540-42271-4. ISSN 0302-9743 (print), 1611-3349 (electronic). LCCN QA76.9.A43 C65 2001. URL http://link.springer-ny.com/link/service/series/0558/tocs/t2089.htm; http://www.springerlink.com/openurl.asp?genre=issue&issn=0302-9743&volume=2089.

Anikeenko:2007:RQR

[AM07] Alexey V. Anikeenko and Nikolai N. Medvedev. The role of quasi-regular tetrahedra in dense disordered packings of hard spheres. In IEEE [IEE07], pages 130–134. ISBN ???? LCCN ????

Arkus:2011:DFS

[AMB11] Natalie Arkus, Vinothan N. Manoharan, and Michael P. Brenner. Deriving finite sphere packings. *SIAM Journal on Discrete Mathematics*, 25(4):1860–1901, ???? 2011. CODEN SJDMEC. ISSN 0895-4801 (print), 1095-7146 (electronic). URL http://epubs.siam.org/sidma/resource/1/sjdmec/v25/i4/p1860_s1.

Anonymous:1997:EDF

[Ano97] Anonymous. Erratum: "The dimensional family approach in (hyper)sphere packing: a typological study for new patterns, structures, and interdimensional functions". *Applied Mathematics and Computation*, 88(1):??, December 15, 1997. CODEN AMHCBQ. ISSN 0096-3003 (print), 1873-5649 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0096300397004025. See [Mus97, Mus98].

Anonymous:1999:ICH

[Ano99] Anonymous. Interval computations help in proving the Kepler conjecture. *Reliable Computing = Nadezhnye vychisleniia*, 5 (2):197–199, May 1999. CODEN RCOMF8. ISSN 1385-3139 (print), 1573-1340 (electronic). URL http://link.springer.com/article/10.1023/A%3A1017205323815/; http://www.springerlink.com/openurl.asp?genre=article&issn=1385-3139&volume=5&issue=2&spage=197-199.

Anonymous:2020:DTH

[Ano20a] Anonymous. Dr. Thomas Hales awarded Senior Berwick Prize. University of Pittsburgh Department of Mathematics Web press release., June 29, 2020. URL https://www.mathematics.pitt.edu/news/dr-thomas-hales-awarded-senior-berwick-prize.

Anonymous:2020:LPW

[Ano20b] Anonymous. LMS Prize Winners 2020. London Mathematical Society Web site., 2020. URL https://www.lms.ac.uk/news-entry/26062020-1657/lms-prize-winners-2020; https://www.lms.ac.uk/sites/lms.ac.uk/files/files/Hales_Snr%20Berwick_citation.pdf. From the site: "Professor Thomas Hales of the University of Pittsburgh is awarded the Senior Berwick Prize in recognition of his book 'Dense sphere packings. A blueprint for formal proofs', published in the LMS Lecture Note Series in 2012.".

Anonymous:2023:EES

[Ano23] Anonymous. Elusive 'Einstein' solves a longstanding math problem. *New York Times*, ??(??):??, March 27, 2023. CODEN NYTIAO. ISSN 0362-4331 (print), 1542-667X, 1553-8095. URL https://www.nytimes.com/2023/03/28/science/mathematics-tiling-einstein.html. See preprint [SMKGS23].

Andreanov:2012:RPL

[AS12] A. Andreanov and A. Scardicchio. Random perfect lattices and the sphere packing problem. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 86(4 (part 1)):041117, October 2012. CODEN PLEEE8. ISSN 1550-2376.

Avigad:2019:MM

[Avi19] Jeremy Avigad. The mechanization of mathematics. In Pitici [Pit19], pages 120–131. ISBN 0-691-19835-7, 0-691-19867-5. LCCN QA8.6 .B337 2019.

Aste:2000:PPP

[AW00] Tomaso Aste and Denis Weaire. *The Pursuit of Perfect Packing*. Institute of Physics Publishing, Bristol, UK and Philadelphia, PA, USA, 2000. ISBN 0-7503-0647-5 (hardcover), 0-7503-0648-3 (paperback). xi + 136 pp. LCCN QA166.7 .A78 2000.

Agapie:2010:RPH

[AW10] Stefan C. Agapie and Paula A. Whitlock. Random packing of hyperspheres and Marsaglia's parking lot test. *Monte Carlo Methods and Applications*, 16(3–4):197–209, December 2010. CODEN MCMAC6. ISSN 0929-9629 (print), 1569-3961 (electronic). URL http://www.degruyter.com/view/j/mcma.2010.16.issue-3-4/mcma.2010.019/mcma.2010.019.xml.

Boroczky:2004:FPC

[B¨04] Károly Böröczky, Jr. *Finite Packing and Covering*, volume 154 of *Cambridge tracts in mathematics*. Cambridge University Press, Cambridge, UK, 2004. ISBN 0-521-80157-5. xvii + 380 pp. LCCN QA166.7 .B67 2004. URL http://www.loc.gov/catdir/description/cam041/2003065450.html; http://www.loc.gov/catdir/samples/cam051/2003065450.html; http://www.loc.gov/catdir/toc/cam041/2003065450.html.

Bailey:2024:CAF

[Bai24] David H. Bailey. Computation, AI and the future of mathematics: Hales' proof of the Kepler conjecture [and more]. Math Scholar blog., June 13, 2024. URL https://mathscholar.org/2024/06/computation-ai-and-the-future-of-mathematics/.

Balou:2011:THT

[Bal11] A. Haji Akbari Balou. *Thermodynamics of the hard tetrahedron system*. Ph.D. thesis, University of Michigan, Ann Arbor, MI, USA, 2011. ???? pp. URL http://hdl.handle.net/2027.42/91590.

Bailey:2014:FPC

[BB14] David H. Bailey and Jonathan M. Borwein. Formal proof completed for Kepler's conjecture on sphere packing. Math Drudge, August 16, 2014. URL https://experimentalmath.info/blog/2014/08/formal-proof-completed-for-keplers-conjecture-on-sphere-packing/.

Bailey:2016:SPP

[BB16] David H. Bailey and Jonathan M. Borwein. Sphere packing problem solved in 8 and 24 dimensions. Blog posting, April 1, 2016. URL http://experimentalmath.info/blog/2016/04/sphere-packing-problem-solved-in-8-and-24-dimensions/. See research papers [Via16, CKM+16].

Bezdek:1998:FUS

[BBC98] András Bezdek, Károly Bezdek, and Robert Connelly. Finite and uniform stability of sphere packings. *Discrete and Computational Geometry*, 20(1):111–130, July 1998. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic). URL http://link.springer.de/link/service/journals/00454/bibs/20n1p111.html.

Black:2022:MBR

[BC22] Travis J. Black and Alexei F. Cheviakov. 3DRSP: Matlab-based random sphere packing code in three dimensions. *SoftwareX*, 18(??):??, June 2022. CODEN ???? ISSN 2352-7110. URL http://www.sciencedirect.com/science/article/pii/S2352711022000437.

Bagchi:1983:TAA

[BCR83] Bagchi, Cerjan, and Stuart A. Rice. Theoretical analysis of the achievement of random close packing of hard spheres and a conjecture on spinodal decomposition. *Physical Review B: Condensed Matter and Materials Physics*, 28:6411, 1983. CODEN PRBMDO. ISSN 1098-0121.

Busa:2005:AFP

[BDH+05] Ján Busa, Jozef Dzurina, Edik Hayryan, Shura Hayryan, Chin-Kun Hu, Ján Plávka, Imrich Pokorný, Jaroslav Skrivánek, and

Ming-Chya Wu. ARVO: A Fortran package for computing the solvent accessible surface area and the excluded volume of overlapping spheres via analytic equations. *Computer Physics Communications*, 165(1):59–96, 2005. CODEN CPHCBZ. ISSN 0010-4655 (print), 1879-2944 (electronic).

Bern:2000:QMC

[BE00] M. Bern and D. Eppstein. Quadrilateral meshing by circle packing. *International Journal of Computational Geometry and Applications (IJCGA)*, 10(4):347–??, 2000. CODEN IJCAEV. ISSN 0218-1959.

Berger:1993:PC

[Ber93] Marcel Berger. Les paquets de cercles. (French) [Circle packing]. In *Differential geometry and topology (Alghero, 1992)*, pages 23–64. World Scientific Publishing Co. Pte. Ltd., P. O. Box 128, Farrer Road, Singapore 9128, 1993.

Bezdek:1997:IID

[Bez97] Károly Bezdek. Isoperimetric inequalities and the dodecahedral conjecture. *International Journal of Mathematics*, 8(6):759–780, 1997. ISSN 0129-167X.

Bezdek:2006:SPR

[Bez06] Károly Bezdek. Sphere packings revisited. *European Journal of Combinatorics*, 27(6):864–883, 2006. CODEN EJOCDI. ISSN 0195-6698.

Bezdek:2013:SVK

[Bez13] Károly Bezdek. On a strong version of the Kepler Conjecture. *Mathematika*, 59(1):23–30, 2013. CODEN MTKAAB. ISSN 0025-5793.

Betke:1998:FPS

[BH98] Ulrich Betke and Martin Henk. Finite packings of spheres. *Discrete and Computational Geometry*, 19(2):197–227, February 1998. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic). URL `http://link.springer.de/link/service/journals/00454/bibs/19n2p197.html`.

Betke:2000:DLP

[BH00] U. Betke and M. Henk. Densest lattice packings of 3-polytopes. *Computational Geometry. Theory and Applications*, 16(3):157–186, July 2000. ISSN 0925-7721.

Bobenko:2001:CSC

[BH01] Alexander I. Bobenko and Tim Hoffmann. Conformally symmetric circle packings: a generalization of Doyle's spirals. *Experimental Mathematics*, 10(1):141–150, ???? 2001. CODEN ???? ISSN 1058-6458 (print), 1944-950X (electronic). URL `http://projecteuclid.org/euclid.em/999188429`.

Billard:1985:CSS

[Bil85] L. (Lynne) Billard, editor. *Computer science and statistics: proceedings of the Sixteenth Symposium on the Interface, Atlanta, Georgia, March 1984*. Elsevier Science Publishers B.V., Amsterdam, The Netherlands, 1985. ISBN 0-444-87725-8. LCCN QA276.4 .S95 1984.

Baker:2010:MMS

[BK10] Jessica Baker and Arshad Kudrolli. Maximum and minimum stable random packings of Platonic solids. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 82(6 (part 1)):061304, December 2010. CODEN PLEEE8. ISSN 1550-2376.

Bogachev:2024:KSP

[BKK24] Nikolay Bogachev, Alexander Kolpakov, and Alex Kontorovich. Kleinian sphere packings, reflection groups, and arithmeticity. *Mathematics of Computation*, 93(345):505–521, January 2024. CODEN MCMPAF. ISSN 0025-5718 (print), 1088-6842 (electronic). URL `https://www.ams.org/journals/mcom/2024-93-345/S0025-5718-2023-03858-3`.

Bezdek:1991:MDS

[BKM91] András Bezdek, Wlodzimierz Kuperberg, and E. Makai. Maximum density space packing with parallel strings of spheres. *Discrete and Computational Geometry*, 6(1):277–283, December 1991. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Blinovsky:1999:MPE

[Bli99] Volodia Blinovsky. Multiple packing of the Euclidean sphere. *IEEE Transactions on Information Theory*, 45(4):1334–1337, April 1999. CODEN IETTAW. ISSN 0018-9448 (print), 1557-9654 (electronic).

Biswal:2010:EBS

[BLR10] Punyashloka Biswal, James R. Lee, and Satish Rao. Eigenvalue bounds, spectral partitioning, and metrical deformations via flows. *Journal of the ACM*, 57(3):13:1–13:23, March 2010. CODEN JACOAH. ISSN 0004-5411 (print), 1557-735X (electronic).

Barg:2000:BPS

[BN00] A. Barg and D. Nogin. Bounds for packings of spheres in the Grassmann manifolds. Technical Report 2000-19, DIMACS, July 27 2000. URL `ftp://dimacs.rutgers.edu/pub/dimacs/TechnicalReports/TechReports/2000/2000-19.ps.gz`. Sat, 5 Aug 2000 13:00:00 GMT.

Barg:2002:BPS

[BN02] Alexander Barg and Dmitry Yu. Nogin. Bounds on packings of spheres in the Grassmann manifold. *IEEE Transactions on Information Theory*, 48(9):2450–2454, September 2002. CODEN IETTAW. ISSN 0018-9448 (print), 1557-9654 (electronic).

Barg:2005:CBP

[BN05] Alexander Barg and Dmitry Yu. Nogin. Correction to "bounds on packings of spheres in the Grassmann manifold". *IEEE Transactions on Information Theory*, 51(7):2732, July 2005. CODEN IETTAW. ISSN 0018-9448 (print), 1557-9654 (electronic).

Bowen:2003:DPE

[BR03] Lewis Bowen and Charles Radin. Densest packing of equal spheres in hyperbolic space. *Discrete and Computational Geometry*, 29 (1):23–39, December 2003. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic). URL `http://link.springer.de/link/service/journals/00454/contents/02/2791/index.html`.

Botana:2007:ADG

[BR07] Francisco Botana and Tomas Recio, editors. *Automated deduction in geometry: 6th international workshop, ADG 2006, Pontevedra, Spain, August 31–September 2, 2006. revised papers*, volume 4869 of *Lecture Notes in Computer Science*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2007. ISBN 3-540-77355-X (softcover). LCCN QA448.D38 I577 2006. Revised papers from the 6th International Workshop (ADG 2006) held at the University of Vigo, Pontevedra, August 31–September 2, 2006.

Brackenridge:1995:KND

[Bra95] J. Bruce Brackenridge. *The key to Newton's dynamics: the Kepler problem and the Principia: containing an English translation of sections 1, 2, and 3 of book one from the first (1687) edition of Newton's Mathematical Principles of Natural Philosophy*. University of California Press, Berkeley, CA, USA, 1995. ISBN 0-520-20065-9 (hardcover), 0-520-20217-1 (paperback). xiii + 299 pp. LCCN QB355 .B694 1995. URL `http://www.loc.gov/catdir/bios/ucal051/95032978.html`; `http://www.loc.gov/catdir/description/ucal041/95032978.html`.

Blaisdell:1970:RSP

[BS70] B. E. Blaisdell and H. Solomon. On random sequential packing in the plane and a conjecture of Palásti. *Journal of Applied Probability*, 7(3):667–689, December 1970. CODEN JPRBAM. ISSN 0021-9002 (print), 1475-6072 (electronic). URL `http://www.jstor.org/stable/3211946`.

Benjamini:2001:RDL

[BS01] Itai Benjamini and Oded Schramm. Recurrence of distributional limits of finite planar graphs. *Electronic Journal of Probability*, 6: 23:1–23:13, 2001. CODEN ???? ISSN 1083-6489. URL `http://ejp.ejpecp.org/article/view/96`.

Birgin:2008:MOD

[BS08] Ernesto G. Birgin and F. N. C. Sobral. Minimizing the object dimensions in circle and sphere packing problems. *Computers and Operations Research*, 35(7):2357–2375, 2008. CODEN CMORAP. ISSN 0305-0548 (print), 1873-765X (electronic).

Benjamini:2013:PHC

[BS13] Itai Benjamini and Alexandre Stauffer. Perturbing the hexagonal circle packing: A percolation perspective. *Annales de l'Institut Henri Poincaré. Probabilités et Statistiques*, 49(4):1141–1157, November 2013. CODEN AHPBAR. ISSN 0246-0203 (print), 1778-7017 (electronic). URL `http://projecteuclid.org/euclid.aihp/1380718741`.

Bundy:2006:VMD

[Bun06] Alan Bundy. A very mathematical dilemma. *The Computer Journal*, 49(4):480–486, July 2006. CODEN CMPJA6.

ISSN 0010-4620 (print), 1460-2067 (electronic). URL `http://comjnl.oxfordjournals.org/cgi/content/abstract/49/4/480`; `http://comjnl.oxfordjournals.org/cgi/content/full/49/4/480`; `http://comjnl.oxfordjournals.org/cgi/reprint/49/4/480`.

Backofen:2001:OCF

[BW01] Rolf Backofen and Sebastian Will. Optimally compact finite sphere packings — hydrophobic cores in the FCC. In Amir and Landau [AL01], pages 257–272. CODEN LNCSD9. ISBN 3-540-42271-4. ISSN 0302-9743 (print), 1611-3349 (electronic). LCCN QA76.9.A43 C65 2001. URL `http://link.springer-ny.com/link/service/series/0558/bibs/2089/20890257.htm`; `http://link.springer-ny.com/link/service/series/0558/papers/2089/20890257.pdf`; `http://link.springer-ny.com/link/service/series/0558/tocs/t2089.htm`.

Carette:2013:ICM

[CAL+13] Jacques Carette, David Aspinall, Christoph Lange, Petr Sojka, and Wolfgang Windsteiger, editors. *Intelligent computer mathematics: MKM, Calculemus, DML, and Systems and Projects 2013, held as part of CICM 2013, Bath, UK, July 8–12, 2013. Proceedings*, volume 7961 of *Lecture notes in computer science*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2013. ISBN 3-642-39319-5 (paperback), 3-642-39320-9 (e-book). LCCN QA76.9.M35 I58 2013.

Casti:2001:MMF

[Cas01] J. L. Casti. *Mathematical mountaintops: the five most famous problems of all time*. Oxford University Press, Walton Street, Oxford OX2 6DP, UK, 2001. ISBN 0-19-514171-7. 177 + 3 pp. LCCN QA93 .C386 2001.

Cohn:2003:NUB

[CE03] Henry Cohn and Noam Elkies. New upper bounds on sphere packings I. *Annals of Mathematics (2)*, 157(2):698–714, March 2003. CODEN ANMAAH. ISSN 0003-486X (print), 1939-8980 (electronic). URL `http://www.jstor.org/stable/3597215`.

Chen:2010:DCD

[CEG10] Elizabeth R. Chen, Michael Engel, and Sharon C. Glotzer. Dense crystalline dimer packings of regular tetrahedra. *Discrete and*

Computational Geometry, 44(2):253–280, September 2010. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Cepelewicz:2023:MCQ

[Cep23] Jordana Cepelewicz. Mathematicians complete quest to build ‘spherical cubes’. *Quanta Magazine*, ??(??):??, February 10, 2023. URL https://www.quantamagazine.org/mathematicians-complete-quest-to-build-spherical-cubes-20230210/.

Cox:2010:MPC

[CF10] S. J. Cox and E. Flikkema. The minimal perimeter for N confined deformable bubbles of equal area. *Electronic Journal of Combinatorics*, 17(1):23, 2010. ISSN 1077-8926 (print), 1097-1440 (electronic). URL http://www.combinatorics.org/Volume_17/Abstracts/v17i1r45.html. Research Paper 45.

Cox:2003:MPI

[CGV+03] S. J. Cox, F. Graner, M. Fatima Vaz, C. Monnereaupittet, and N. Pittet. Minimal perimeter for N identical bubbles in two dimensions: calculations and simulations. *Philosophical Magazine*, 83(??):1393–1406, ???? 2003. CODEN PHMAA4. ISSN 0031-8086.

Chen:2008:SPP

[Che08a] Danny Z. Chen. Sphere packing problem. In Kao [Kao08], pages liii + 1166. ISBN 0-387-30162-3, 0-387-30770-2. LCCN QA9.58 .E52 2007eb; QA9.58 .E52 2007ebeb; QA9.58; QA9.58 .E52 2007.

Chen:2008:DPR

[Che08b] Elizabeth R. Chen. A dense packing of regular tetrahedra. *Discrete and Computational Geometry*, 40(2):214–240, September 2008. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic). URL http://www.springerlink.com/content/f06j66h83424q440/fulltext.pdf.

Chen:2010:PTP

[Che10] Elizabeth R. Chen. *A picturebook of tetrahedral packings*. Ph.D. thesis, University of Michigan, Ann Arbor, MI. USA, 2010. ???? pp. URL http://hdl.handle.net/2027.42/75860; http://mirlyn.lib.umich.edu/Record/008012603.

Chen:2013:GCL

[Che13] Hao Chen. On a generalization of Craig lattices. *J. Théor. Nombres Bordeaux*, 25(1):59–70, 2013. ISSN 1246-7405. URL http://jtnb.cedram.org/item?id=JTNB_2013__25_1_59_0.

Chen:2001:ACS

[CHH+01] Danny Z. Chen, Xiaobo Hu, Yingping Huang, Yifan Li, and Jinhui Xu. Algorithms for congruent sphere packing and applications. In ACM [ACM01], pages 212–221. ISBN 1-58113-357-X. LCCN ????

Coffman:1992:PAP

[CJS92] E. G. Coffman, Jr., D. S. Johnson, and P. W. Shor. Probabilistic analysis of packing and related partitioning problems. In Steele and Eddy [SE92], chapter 7, pages 87–108. ISBN 0-309-04776-5. LCCN QA273.P7953 1992. URL http://site.ebrary.com/lib/stanford/Doc?id=10056784; http://www.nap.edu/books/0309047765/html/.

Clare:1991:OPC

[CK91] B. W. Clare and D. L. Kepert. The optimal packing of circles on a sphere. *Journal of Mathematical Chemistry*, 6(1):325–349, December 1991. CODEN JMCHEG. ISSN 0259-9791 (print), 1572-8897 (electronic). URL http://link.springer.com/article/10.1007/BF01192589.

Cohn:2016:SPP

[CKM+16] Henry Cohn, Abhinav Kumar, Stephen D. Miller, Danylo Radchenko, and Maryna Viazovska. The sphere packing problem in dimension 24. *arxiv.org*, ??(??):1–12, March 21, 2016. URL http://arxiv.org/abs/1603.06518.

Cohn:2019:UOL

[CKM+19] Henry Cohn, Abhinav Kumar, Stephen D. Miller, Danylo Radchenko, and Maryna Viazovska. Universal optimality of the E_8 and Leech lattices and interpolation formulas. *arXiv.org*, ??(??):1–88, February 13, 2019. URL https://arxiv.org/pdf/1902.05438.pdf.

Cicalese:2000:OCO

[CM00] Ferdinando Cicalese and Daniele Mundici. Optimal coding with one asymmetric error: Below the sphere packing bound. *Lecture Notes in Computer Science*, 1858:159–??, 2000. CODEN

LNCSD9. ISSN 0302-9743 (print), 1611-3349 (electronic). URL http://link.springer-ny.com/link/service/series/0558/bibs/1858/18580159.htm; http://link.springer-ny.com/link/service/series/0558/papers/1858/18580159.pdf.

Cohn:2009:MPT

[Coh09] Henry Cohn. Mathematical physics: A tight squeeze. *Nature*, 460(7257):801–802, August 13, 2009. CODEN NATUAS. ISSN 0028-0836 (print), 1476-4687 (electronic). URL http://www.nature.com/nature/journal/v460/n7257/; http://www.princeton.edu/main/news/archive/S25/00/22A50/; http://www.nature.com/nature/journal/v460/n7257/pdf/460801a.pdf.

Cohn:2017:CBS

[Coh17] Henry Cohn. A conceptual breakthrough in sphere packing. *Notices of the American Mathematical Society*, 64(2):102–115, February 2017. CODEN AMNOAN. ISSN 0002-9920 (print), 1088-9477 (electronic). URL http://www.ams.org/publications/journals/notices/201702/rnoti-p102.pdf.

Cornuejols:2001:COP

[Cor01] Gérard Cornuéjols. *Combinatorial Optimization: Packing and Covering*, volume 74 of *CBMS-NSF regional conference series in applied mathematics*. Society for Industrial and Applied Mathematics, Philadelphia, PA, USA, 2001. ISBN 0-89871-481-8 (paperback). xi + 132 pp. LCCN QA166.7 .C67 2001. URL http://www.loc.gov/catdir/enhancements/fy0708/00066073-d.html; http://www.loc.gov/catdir/enhancements/fy0708/00066073-t.html.

Cornforth:2002:EOB

[Cor02] David Cornforth. Evolution in the orange box — A new approach to the sphere-packing problem in CMAC-based neural networks. In McKay and Slaney [MS02], pages 333–343. CODEN LNCSD9. ISBN 3-540-00197-2 (paperback). ISSN 0302-9743 (print), 1611-3349 (electronic). LCCN Q334 .A97 2002. URL http://link.springer.de/link/service/series/0558/bibs/2557/25570333.htm; http://link.springer.de/link/service/series/0558/papers/2557/25570333.pdf.

Chait-Roth:2020:TCS

[CRCS20] Devora Chait-Roth, Alisa Cui, and Zachary Stier. A taxonomy of crystallographic sphere packings. *Journal of Number Theory*, 207(??):196–246, February 2020. CODEN JNUTA9. ISSN 0022-314X (print), 1096-1658 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0022314X19302604`.

Conway:1988:SPL

[CS+88] John Horton Conway, N. J. A. (Neil James Alexander) Sloane, et al. *Sphere Packings, Lattices and Groups*, volume 290 of *Grundlehren der mathematischen Wissenschaften*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 1988. ISBN 0-387-96617-X. xxvii + 663 pp. LCCN QA166.7 .C66 1988; QA3 .G75; QA3 .G7; QA166.7 .C66 1988. US$45.00.

Conway:1993:SPL

[CS+93] John Horton Conway, N. J. A. (Neil James Alexander) Sloane, et al. *Sphere packings, lattices, and groups*, volume 290 of *Grundlehren der mathematischen Wissenschaften*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., second edition, 1993. ISBN 0-387-97912-3, 3-540-97912-3. xliii + 679 pp. LCCN QA166.7 .C66 1993.

Conway:1995:WAB

[CS95] John H. Conway and Neil J. A. Sloane. What are all the best sphere packings in low dimensions? *Discrete and Computational Geometry*, 13(1):383–403, December 1995. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Conway:1999:SPL

[CS99] John Horton Conway and N. J. A. (Neil James Alexander) Sloane, editors. *Sphere packings, lattices, and groups*, volume 290 of *Grundlehren der mathematischen Wissenschaften*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., third edition, 1999. ISBN 0-387-98585-9 (hardcover). lxxiv + 703 pp. LCCN QA166.7 .C66 1999; QA3 .G75.

Conway:2006:PTC

[CT06] J. H. Conway and S. Torquato. Packing, tiling, and covering with tetrahedra. *Proceedings of the National Academy of Sciences of the United States of America*, 103(28):10612–10617, July

11, 2006. CODEN PNASA6. ISSN 0027-8424 (print), 1091-6490 (electronic). URL http://www.jstor.org/stable/30049550.

Cohn:2022:DLP

[CT22] Henry Cohn and Nicholas Triantafillou. Dual linear programming bounds for sphere packing via modular forms. *Mathematics of Computation*, 91(333):491–508, January 2022. CODEN MCMPAF. ISSN 0025-5718 (print), 1088-6842 (electronic). URL https://www.ams.org/journals/mcom/2022-91-333/S0025-5718-2021-03662-5; https://www.ams.org/journals/mcom/2022-91-333/S0025-5718-2021-03662-5/S0025-5718-2021-03662-5.pdf; https://www.ams.org/mathscinet/search/authors.html?mrauthid=606578; https://www.ams.org/mathscinet/search/authors.html?mrauthid=978350.

Davies:2005:WM

[Dav05] Brian Davies. Whither mathematics? *Notices of the American Mathematical Society*, 52(11):1350–1356, December 2005. CODEN AMNOAN. ISSN 0002-9920. URL http://www.ams.org/notices/200511/comm-davies.pdf.

deCourcy-Ireland:2024:SDS

[dCIDV24] Matthew de Courcy-Ireland, Maria Dostert, and Maryna Viazovska. Six-dimensional sphere packing and linear programming. *Mathematics of Computation*, 93(348):1993–2029, October 2024. CODEN MCMPAF. ISSN 0025-5718 (print), 1088-6842 (electronic). URL https://www.ams.org/journals/mcom/2024-93-348/S0025-5718-2024-03959-5.

Donev:2007:UJP

[DCST07] A. Donev, R. Connelly, F. H. Stillinger, and S. Torquato. Underconstrained jammed packings of nonspherical hard particles: ellipses and ellipsoids. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 75(5):051304, ???? 2007. CODEN PLEEE8. ISSN 1539-3755 (print), 1550-2376 (electronic). URL http://link.aps.org/doi/10.1103/PhysRevE.75.051304.

Degond:2017:DAH

[DFM17] Pierre Degond, Marina A. Ferreira, and Sebastien Motsch. Damped Arrow-Hurwicz algorithm for sphere packing. *Journal of Computational Physics*, 332(??):47–65, March 1, 2017. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic).

URL http://www.sciencedirect.com/science/article/pii/S0021999116306398.

deGoes:2014:WTG

[dGMMD14] Fernando de Goes, Pooran Memari, Patrick Mullen, and Mathieu Desbrun. Weighted triangulations for geometry processing. *ACM Transactions on Graphics*, 33(3):28:1–28:??, May 2014. CODEN ATGRDF. ISSN 0730-0301 (print), 1557-7368 (electronic).

Dubejko:1995:CPE

[DS95] Tomasz Dubejko and Kenneth Stephenson. Circle packing: experiments in discrete analytic function theory. *Experimental Mathematics*, 4(4):307–348, ???? 1995. CODEN ???? ISSN 1058-6458 (print), 1944-950X (electronic). URL http://projecteuclid.org/euclid.em/1047674391.

Donev:2004:UDC

[DSCT04] A. Donev, F. H. Stillinger, P. M. Chaikin, and S. Torquato. Unusually dense crystal ellipsoid packings. *Physical Review Letters*, 92(25):255506, June 25, 2004. CODEN PRLTAO. ISSN 0031-9007 (print), 1079-7114 (electronic), 1092-0145.

Donev:2005:NLCa

[DTS05a] Aleksandar Donev, Salvatore Torquato, and Frank H. Stillinger. Neighbor list collision-driven molecular dynamics simulation for nonspherical hard particles. I. Algorithmic details. *Journal of Computational Physics*, 202(2):737–764, January 20, 2005. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999104003146.

Donev:2005:NLCb

[DTS05b] Aleksandar Donev, Salvatore Torquato, and Frank H. Stillinger. Neighbor list collision-driven molecular dynamics simulation for nonspherical hard particles. II. Applications to ellipses and ellipsoids. *Journal of Computational Physics*, 202(2):765–793, January 20, 2005. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999104003948.

Donev:2004:LPA

[DTSC04] Aleksandar Donev, Salvatore Torquato, Frank H. Stillinger, and Robert Connelly. A linear programming algorithm to test for jamming in hard-sphere packings. *Journal of Computational Physics*, 197(1):139–166, June 10, 2004. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999103006235`.

Entezari:2009:SPT

[EDM09] Alireza Entezari, Ramsay Dyer, and Torsten Möller. From sphere packing to the theory of optimal lattice sampling. In *Mathematical foundations of scientific visualization, computer graphics, and massive data exploration*, Math. Vis., pages 227–255. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2009.

Edwards:2016:NAP

[Edw16] Chris Edwards. News: Automating proofs. *Communications of the ACM*, 59(4):13–15, April 2016. CODEN CACMA2. ISSN 0001-0782 (print), 1557-7317 (electronic). URL `http://cacm.acm.org/magazines/2016/4/200157/fulltext`.

Edelsbrunner:2018:OFL

[EIH18] Herbert Edelsbrunner and Mabel Iglesias-Ham. On the optimality of the FCC lattice for soft sphere packing. *SIAM Journal on Discrete Mathematics*, 32(1):750–782, ???? 2018. CODEN SJDMEC. ISSN 0895-4801 (print), 1095-7146 (electronic).

Eppstein:1997:FCP

[Epp97] David Eppstein. Faster circle packing with application to nonobtuse triangulation. *International Journal of Computational Geometry and Applications (IJCGA)*, 7(5):485–??, October 1997. CODEN IJCAEV. ISSN 0218-1959.

Feather:2010:GMD

[Fea10] C. Feather. A garden of mathematical delights [review of "*Sphere packing, Lewis Carroll, and Reversi*" (Gardner, M.; 2009)]. *IEEE Spectrum*, 47(4):23, April 2010. CODEN IEESAM. ISSN 0018-9235 (print), 1939-9340 (electronic).

Ferguson:2006:SPV

[Fer06] Samuel P. Ferguson. Sphere packings. V. Pentahedral prisms. *Discrete and Computational Geometry*, 36(1):167–204, July 2006. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Furbach:2007:ART

[FS07] Ulrich Furbach and Natarajan Shankar, editors. *Automated Reasoning: Third International Joint Conference, IJCAR 2006, Seattle, WA, USA, August 17–20, 2006: Proceedings*, volume 4130 of *Lecture Notes in Computer Science Ser.* Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2007. ISBN 3-540-37187-7 (paperback), 3-540-37188-5 (e-book). LCCN QA76.9.A96 I33 2006. URL `http://WX7CF7ZP2H.search.serialssolutions.com/?V=1.0&L=WX7CF7ZP2H&S=JCs&C=TC`.

Fuchs:2011:SEI

[FS11] Elena Fuchs and Katherine Sanden. Some experiments with integral Apollonian circle packings. *Experimental Mathematics*, 20(4): 380–399, ???? 2011. CODEN ???? ISSN 1058-6458 (print), 1944-950X (electronic). URL `http://projecteuclid.org/euclid.em/1323367153`.

Fukuda:2010:MSI

[FVJT10] Komei Fukuda, Joris Van der Hoeven, Michael Joswig, and Nobuki Takayama, editors. *Mathematical Software — ICMS 2010: Third International Congress on Mathematical Software, Kobe, Japan, September 13–17, 2010, Proceedings*, Lecture Notes in Computer Science / Theoretical Computer Science and General Issues Ser. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2010. ISBN 3-642-15581-2 (paperback). LCCN QA76.95 .I5654 2010. URL `http://link.springer.com/openurl?genre=book&isbn=978-3-642-15581-9`.

Gardner:2001:CBM

[Gar01a] Martin Gardner. *The colossal book of mathematics: classic puzzles, paradoxes, and problems: number theory, algebra, geometry, probability, topology, game theory, infinity, and other topics of recreational mathematics.* W. W. Norton & Co., New York, NY, USA, 2001. ISBN 0-393-02023-1. xi + 724 pp. LCCN QA95 .G245 2001.

Gardner:2001:PS

[Gar01b] Martin Gardner. Packing spheres. In *The colossal book of mathematics: classic puzzles, paradoxes, and problems: number theory, algebra, geometry, probability, topology, game theory, infinity, and other topics of recreational mathematics* [Gar01a], chapter 10, pages 128–136. ISBN 0-393-02023-1. LCCN QA95 .G245 2001. Page 135 mentions a conjecture by Stan Ulam in 1972 that "the maximal density (≈ 0.74048) for packing congruent spheres is smaller than that for any other convex body" [LZ12, page 1547].

Garcke:2012:KKC

[Gar12] Harald Garcke. Kepler, Kristalle und Computer. Mathematik und numerische Simulationen helfen Kristallwachstum zu verstehen. (German) [Kepler, crystals and computer. Mathematics and numerical simulations help crystal-growth understanding]. *Mitteilungen der Deutschen Mathematiker-Vereinigung*, 20(4):219–228, 2012. ISSN 0947-4471.

Gavrilova:2008:GVD

[Gav08] Marina L. Gavrilova, editor. *Generalized Voronoi diagram: a geometry-based approach to computational intelligence*, volume 158 of *Studies in computational intelligence*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2008. ISBN 3-540-85126-7, 3-540-85125-9. ISSN 1860-949X. xxi + 312 pp. LCCN QA278.2 .G46 2008ebeb; QA278.2 .G46 2008eb; QA278.2; QA278.2 .G46 2008.

Gravel:2011:UBP

[GEK11] Simon Gravel, Veit Elser, and Yoav Kallus. Upper bound on the packing density of regular tetrahedra and octahedra. *Discrete and Computational Geometry*, 46(4):799–818, December 2011. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Gensane:2004:DPE

[Gen04] Thierry Gensane. Dense packings of equal spheres in a cube. *Electronic Journal of Combinatorics*, 11(1), 2004. ISSN 1077-8926 (print), 1097-1440 (electronic). URL `http://www.combinatorics.org/Volume_11/Abstracts/v11i1r33.html`.

Gilbert:1979:PPT

[Gil79] E. N. Gilbert. The packing problem for twisted pairs. *The Bell System Technical Journal*, 58(10):2143–2162, December 1979. CODEN BSTJAN. ISSN 0005-8580. URL `http://bstj.bell-labs.com/BSTJ/images/Vol58/bstj58-10-2143.pdf`.

Gabbrielli:2012:FTS

[GJT12] Ruggero Gabbrielli, Yang Jiao, and Salvatore Torquato. Families of tessellations of space by elementary polyhedra via retessellations of face-centered-cubic and related tilings. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary* *topics)*, 86(4 (part 1)):041141, October 2012. CODEN PLEEE8. ISSN 1550-2376.

Graham:2003:ACP

[GLM+03] Ronald L. Graham, Jeffrey C. Lagarias, Colin L. Mallows, Allan R. Wilks, and Catherine H. Yan. Apollonian circle packings: number theory. *Journal of Number Theory*, 100(1):1–45, May 2003. CODEN JNUTA9. ISSN 0022-314X (print), 1096-1658 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0022314X03000155.

Gervois:2002:VRT

[GORT02] A. Gervois, Luc Oger, Patrick Richard, and Jean Paul Troadec. Voronoi and radical tessellations of packings of spheres. In Sloot et al. [STDH02], pages 95–104. CODEN LNCSD9. ISBN 3-540-43594-8 (paperback). ISSN 0302-9743 (print), 1611-3349 (electronic). LCCN QA75.5 .I13 2002. URL http://link.springer.de/link/service/series/0558/bibs/2331/23310095.htm.

Groemer:1962:BDG

[Gro62] H. Groemer. Über die dichteste gitterförmige Lagerung kongruenter Tetraeder. (German) [on the densest lattice storage of congruent tetrahedra]. *Monatshefte für Mathematik*, 66(??):12–15, ???? 1962. CODEN MNMTA2. ISSN 0026-9255 (print), 1436-5081 (electronic).

Gruber:2007:CDG

[Gru07] Peter M. Gruber. *Convex and discrete geometry*, volume 336 of *Grundlehren der mathematischen Wissenschaften*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2007. ISBN 3-540-71132-5 (hardcover). xiii + 578 pp. LCCN QA639.5 .G78 2007. URL http://www.loc.gov/catdir/enhancements/fy0825/2007922936-b.html; http://www.loc.gov/catdir/enhancements/fy0825/2007922936-d.html; http://www.loc.gov/catdir/enhancements/fy0825/2007922936-t.html.

Gortler:2018:BTU

[GSWD18] J. Görtler, C. Schulz, D. Weiskopf, and O. Deussen. Bubble treemaps for uncertainty visualization. *IEEE Transactions on Visualization and Computer Graphics*, 24(1):719–728, January 2018. CODEN ITVGEA. ISSN 1077-2626 (print), 1941-0506 (electronic), 2160-9306.

Gruber:1993:HCG

[GW93] Peter M. Gruber and Jörg M. Wills, editors. *Handbook of Convex Geometry*. North-Holland Publishing Co., Amsterdam, The Netherlands, 1993. ISBN 0-444-89598-1 (set of vols. A and B), 0-444-89596-5 (vol. A), 0-444-89597-3 (vol. B). xi + 735 (vol. A), lxvi + 739–1438 (vol. B) pp. LCCN QA639.5 .H36 1993.

Hales:2015:FPK

[HAB+15] Thomas Hales, Mark Adams, Gertrud Bauer, Dat Tat Dang, John Harrison, Truong Le Hoang, Cezary Kaliszyk, Victor Magron, Sean McLaughlin, Thang Tat Nguyen, Truong Quang Nguyen, Tobias Nipkow, Steven Obua, Joseph Pleso, Jason Rute, Alexey Solovyev, An Hoai Thi Ta, Trung Nam Tran, Diep Thi Trieu, Josef Urban, Ky Khac Vu, and Roland Zumkeller. A formal proof of the Kepler conjecture. *ArXiv.org*, page 21, January 2015. URL `http://arxiv.org/abs/1501.02155`.

Haji-Akbari:2011:PDH

[HAEG11] Amir Haji-Akbari, Michael Engel, and Sharon C. Glotzer. Phase diagram of hard tetrahedra. *Journal of Chemical Physics*, 135(19): 194101:1–194101:10, November 15, 2011. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic). URL `http://jcp.aip.org/resource/1/jcpsa6/v135/i19/p194101_s1`.

Haji-Akbari:2009:DQC

[HAEK+09] Amir Haji-Akbari, Michael Engel, Aaron S. Keys, Xiaoyu Zheng, Rolfe G. Petschek, Peter Palffy-Muhoray, and Sharon C. Glotzer. Disordered, quasicrystalline and crystalline phases of densely packed tetrahedra. *Nature*, 462(7274):773–777, December 10, 2009. CODEN NATUAS. ISSN 0028-0836 (print), 1476-4687 (electronic). URL `http://www.nature.com/nature/journal/v462/n7274/full/nature08641.html`.

Hales:1992:SPP

[Hal92] Thomas C. Hales. The sphere packing problem. *Journal of Computational and Applied Mathematics*, 44(1):41–76, December 9, 1992. CODEN JCAMDI. ISSN 0377-0427 (print), 1879-1778 (electronic). URL `http://www.sciencedirect.com/science/article/pii/037704279290052Y`.

Hales:1993:RDS

[Hal93] Thomas C. Hales. Remarks on the density of sphere packings in three dimensions. *Combinatorica*, 13(2):181–197, 1993. CODEN COMBDI. ISSN 0209-9683 (print), 1439-6912 (electronic).

Hales:1994:SKC

[Hal94] Thomas C. Hales. The status of the Kepler Conjecture. *The Mathematical Intelligencer*, 16(3):47–58, 1994. CODEN MAINDC. ISSN 0343-6993 (print), 1866-7414 (electronic).

Hales:1997:SPI

[Hal97a] T. C. Hales. Sphere packings. II. *Discrete and Computational Geometry*, 18(2):135–149, 1997. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Hales:1997:SPa

[Hal97b] Thomas C. Hales. Sphere packings, I. *Discrete and Computational Geometry*, 17(1):1–51, January 1997. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic). URL `http://link.springer.de/link/service/journals/00454/bibs/17n1p1.html`.

Hales:1997:SPb

[Hal97c] Thomas C. Hales. Sphere packings, II. *Discrete and Computational Geometry*, 18(2):135–149, September 1997. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic). URL `http://link.springer.de/link/service/journals/00454/bibs/18n2p125.html`.

Hales:1998:KC

[Hal98] T. Hales. The Kepler Conjecture. arXiv:math.MG/9811078, 1998.

Hales:2000:CH

[Hal00] Thomas C. Hales. Cannonballs and honeycombs. *Notices of the American Mathematical Society*, 47(4):440–449, April 2000. CODEN AMNOAN. ISSN 0002-9920 (print), 1088-9477 (electronic). URL `http://www.ams.org/notices/200004/fea-hales.pdf`. In January 2003, the author was awarded the Chauvenet Prize of the Mathematical Association of America for this article.

Hales:2001:HC

[Hal01a] Thomas C. Hales. The honeycomb conjecture. *Discrete and Computational Geometry*, 25(1):1–22, January 2001. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Hales:2001:SPG

[Hal01b] Thomas C. Hales. Sphere packings and generative [XXX?]. In ACM [ACM01], page 69. ISBN 1-58113-357-X. LCCN ????

Hales:2002:CVK

[Hal02] Thomas C. Hales. A computer verification of the Kepler Conjecture. In *Proceedings of the International Congress of Mathematicians, Vol. III (Beijing, 2002)*, pages 795–804. Higher Education Press, Beijing, People's Republic of China, 2002.

Hales:2003:SAA

[Hal03] Thomas C. Hales. Some algorithms arising in the proof of the Kepler Conjecture. In *Discrete and computational geometry*, volume 25 of *Algorithms Combin.*, pages 489–507. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2003.

Hales:2004:FPK

[Hal04] Thomas C. Hales. Formalizing the proof of the Kepler Conjecture. In Slind et al. [SBG04], page 117. ISBN 3-540-23017-3 (paperback). ISSN 0302-9743 (print), 1611-3349 (electronic). LCCN QA76.9.A96 T655 2004. URL `http://springerlink.metapress.com/openurl.asp?genre=article&issn=0302-9743&spage=117;volume=3223`.

Hales:2005:PKC

[Hal05] Thomas C. Hales. A proof of the Kepler Conjecture. *Annals of Mathematics (2)*, 162(3):1065–1185, 2005. CODEN ANMAAH. ISSN 0003-486X (print), 1939-8980 (electronic). This proof is so complex that twelve journal referees were unable to verify it between its submission in 1998 and publication seven years later, so the editors decided to publish the article with a disclaimer about the lack of proof verification; see [Mor05] for more on this paper, and the associated book [Szp03a].

Hales:2006:HOK

[Hal06a] Thomas C. Hales. Historical overview of the Kepler Conjecture. *Discrete and Computational Geometry*, 36(1):5–20, July 2006. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Hales:2006:SPIa

[Hal06b] Thomas C. Hales. Sphere packings. III. Extremal cases. *Discrete and Computational Geometry*, 36(1):71–110, July 2006. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Hales:2006:SPIb

[Hal06c] Thomas C. Hales. Sphere packings. IV. Detailed bounds. *Discrete and Computational Geometry*, 36(1):111–166, July 2006. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Hales:2006:SPV

[Hal06d] Thomas C. Hales. Sphere packings. VI. Tame graphs and linear programs. *Discrete and Computational Geometry*, 36(1):205–265, July 2006. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Hales:2007:EQR

[Hal07] Thomas C. Hales. Equidecomposable quadratic regions. In Botana and Recio [BR07], pages 24–38. ISBN 3-540-77355-X (softcover). LCCN QA448.D38 I577 2006. Revised papers from the 6th International Workshop (ADG 2006) held at the University of Vigo, Pontevedra, August 31–September 2, 2006.

Hales:2008:FP

[Hal08] Thomas C. Hales. Formal proof. *Notices of the American Mathematical Society*, 55(11):1370–1380, December 2008. CODEN AMNOAN. ISSN 0002-9920 (print), 1088-9477 (electronic). URL `http://www.ams.org/notices/200811/index.html; http://www.ams.org/notices/200811/tx081101370p.pdf`.

Hales:2010:LPK

[Hal10] Thomas C. Hales. Linear programs for the Kepler conjecture. *Lecture Notes in Computer Science*, 6327:149–151, 2010. CODEN LNCSD9. ISSN 0302-9743 (print), 1611-3349 (electronic). URL `http://link.springer.com/content/pdf/10.1007/978-3-642-15582-6_28.pdf`.

Hales:2012:DSP

[Hal12] Thomas Callister Hales. *Dense Sphere Packings: a Blueprint for Formal Proofs*, volume 400 of *London Mathematical Society lecture note series*. Cambridge University Press, Cambridge, UK, 2012.

ISBN 0-521-61770-7 (paperback). xiv + 271 pp. LCCN QA166.7 .H35 2012.

Harrison:2008:FPT

[Har08] John Harrison. Formal proof—theory and practice. *Notices of the American Mathematical Society*, 55(11):1395–1406, 2008. CODEN AMNOAN. ISSN 0002-9920 (print), 1088-9477 (electronic).

Harrison:2013:HLT

[Har13] John Harrison. The HOL Light theory of Euclidean space. *Journal of Automated Reasoning*, 50(2):173–190, February 2013. CODEN JAREEW. ISSN 0168-7433 (print), 1573-0670 (electronic). URL `http://link.springer.com/article/10.1007/s10817-012-9250-9`.

Haussler:1991:SPN

[Hau91] David Haussler. Sphere packing numbers for subsets of the Boolean N-cube with bounded Vapnik–Chervonenkis dimension. Technical Report UCSC-CRL-91-41, University of California, Santa Cruz, Santa Cruz, CA, USA, October 1991. 14 pp. URL `ftp://ftp.cse.ucsc.edu/pub/tr/ucsc-crl-91-41.ps.Z; mailto:rnalib@ftp.cs.ucsc.edu`.

Haussler:1995:SPN

[Hau95] David Haussler. Sphere packing numbers for subsets of the Boolean n-cube with bounded Vapnik–Chervonenkis dimension. *Journal of Combinatorial Theory (Series A)*, 69(2):217–232, 1995. CODEN JCBTA7. ISSN 0097-3165 (print), 1096-0899 (electronic).

Holmes-Cerfon:2016:ERS

[HC16] Miranda C. Holmes-Cerfon. Enumerating rigid sphere packings. *SIAM Review*, 58(2):229–244, ???? 2016. CODEN SIREAD. ISSN 0036-1445 (print), 1095-7200 (electronic).

He:2017:RSP

[He17] Xu He. Rotated sphere packing designs. *Journal of the American Statistical Association*, 112(520):1612–1622, 2017. CODEN JSTNAL. ISSN 0162-1459 (print), 1537-274X (electronic).

He:2019:SRS

[He19] Xu He. Sliced rotated sphere packing designs. *Technometrics*, 61(1):66–76, 2019. CODEN TCMTA2. ISSN 0040-1706 (print), 1537-2723 (electronic).

Henk:1998:KIC

[Hen98] Martin Henk. Kugeln im Computer: ein Beweis der Keplerschen Vermutung?. (German) [Spheres in the computer: a proof of Kepler's conjecture?]. *Mitteilungen der Deutschen Mathematiker-Vereinigung*, ??(4):58–60, 1998. CODEN ???? ISSN 0947-4471.

Henkel:2005:SPB

[Hen05] O. Henkel. Sphere-packing bounds in the Grassmann and Stiefel manifolds. *IEEE Transactions on Information Theory*, 51(10): 3445–3456, October 2005. CODEN IETTAW. ISSN 0018-9448 (print), 1557-9654 (electronic).

Hales:2006:FKC

[HF06] Thomas C. Hales and Samuel P. Ferguson. A formulation of the Kepler Conjecture. *Discrete and Computational Geometry*, 36(1): 21–69, July 2006. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Hales:2011:KC

[HF11] Thomas Hales and Samuel Ferguson. *The Kepler Conjecture*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2011. ISBN 1-4614-1128-9, 1-4614-1129-7. xiv + 456 pp. The Hales-Ferguson proof, Including papers reprinted from Discrete Comput. Geom. **3**6 (2006), no. 1, Edited by Jeffrey C. Lagarias.

Hales:2010:RPK

[HHM+10] Thomas C. Hales, John Harrison, Sean McLaughlin, Tobias Nipkow, Steven Obua, and Roland Zumkeller. A revision of the proof of the Kepler Conjecture. *Discrete and Computational Geometry*, 44(1):1–34, 2010. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Higuti:1961:SSR

[Hig61] Isao Higuti. A statistical study of random packing of unequal spheres. *Annals of the Institute of Statistical Mathematics (Tokyo)*, 12(3):257–271, October 1961. CODEN AISXAD. ISSN 0020-3157 (print), 1572-9052 (electronic). URL `http://link.springer.com/article/10.1007/BF01728935`.

Hilbert:1900:MPV

[Hil00] David Hilbert. Mathematische Probleme. Vortrag, gehalten auf dem internationalen Mathematiker-Kongreß zu Paris 1900. (German) [mathematical problems: Lecture held at the International Mathematicians Congress in Paris 1900]. *Gött. Nachr.*, ??(??): 253–297, ???? 1900. This is the paper in which Hilbert lays out his now-famous list of 20 (revised to 23 in 1901) challenging problems for mathematicians to address in the 20th Century. Reprinted in [Hil01]. English translation in [Hil02, Hil00].

Hilbert:1901:MPV

[Hil01] David Hilbert. Mathematische Probleme. Vortrag, gehalten auf dem internationalen Mathematiker-Kongreß zu Paris 1900. (German) [mathematical problems: Lecture held at the International Mathematicians Congress in Paris 1900]. *Arch. d. Math. u. Phys*, 3(1):44–63, 213–237, ???? 1901.

Hilbert:1902:MP

[Hil02] David Hilbert. Mathematical problems. *Bulletin of the American Mathematical Society*, 8(10):437–479, ???? 1902. CODEN BAMOAD. ISSN 0002-9904 (print), 1936-881X (electronic). URL `http://www.ams.org/journals/bull/1902-08-10/S0002-9904-1902-00923-3/S0002-9904-1902-00923-3.pdf`. English translation of Hilbert's famous list of 23 important problems in mathematics for the 20th Century.

Hilbert:2000:MP

[Hil00] David Hilbert. Mathematical problems. *Bulletin of the American Mathematical Society*, 37(4):407–436, ???? 2000. CODEN BAMOAD. ISSN 0002-9904 (print), 1936-881X (electronic). URL `http://www.ams.org/journals/bull/2000-37-04/S0273-0979-00-00881-8/S0273-0979-00-00881-8.pdf`. Lecture delivered before the International Congress of Mathematicians at Paris in 1900. Reprint of [Hil02]. English translation of [Hil00, **?**].

Haag:2023:LGC

[HKRS23] Summer Haag, Clyde Kertzer, James Rickards, and Katherine E. Stange. The Local–Global Conjecture for Apollonian circle packings is false. *arXiv.org*, ??(??):28, July 6, 2023. URL `https://arxiv.org/abs/2307.02749`.

Hauser:2003:GPM

[HL03] Kai Hauser and Reinhard Lang. On the geometrical and physical meaning of Newton's solution to Kepler's problem. *The Mathematical Intelligencer*, 25(4):35–44, 2003. CODEN MAINDC. ISSN 0343-6993.

Hurd:2005:TPH

[HM05] Joe Hurd and T. F. (Tom F.) Melham, editors. *Theorem proving in higher order logics: 18th international conference, TPHOLs 2005, Oxford, UK, August 22–25, 2005: proceedings*, volume 3603 of *Lecture notes in computer science*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2005. ISBN 3-540-28372-2 (paperback). ISSN 0302-9743 (print), 1611-3349 (electronic). LCCN QA76.9.A96 T655 2005. URL `http://springerlink.metapress.com/openurl.asp?genre=issue&issn=0302-9743&volume=3603`; `http://www.loc.gov/catdir/enhancements/fy0663/2005930490-d.html`; `http://www.loc.gov/catdir/toc/fy0612/2005930490.html`.

Hales:2010:DC

[HM10] Thomas C. Hales and Sean McLaughlin. The dodecahedral conjecture. *Journal of the American Mathematical Society*, 23(2):299–344, 2010. ISSN 0894-0347.

Hokama:2016:BSA

[HMS16] Pedro Hokama, Flávio K. Miyazawa, and Rafael C. S. Schouery. A bounded space algorithm for online circle packing. *Information Processing Letters*, 116(5):337–342, May 2016. CODEN IFPLAT. ISSN 0020-0190 (print), 1872-6119 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0020019015002240`.

Holly:2021:WTA

[Hol21] Jan E. Holly. What type of Apollonian circle packing will appear? *American Mathematical Monthly*, 128(7):611–629, 2021. CODEN AMMYAE. ISSN 0002-9890 (print), 1930-0972 (electronic).

Hoylman:1970:DLP

[Hoy70] D. J. Hoylman. The densest lattice packing of tetrahedra. *Bulletin of the American Mathematical Society*, 76(??):135–137, ???? 1970. CODEN BAMOAD. ISSN 0002-9904 (print), 1936-881X (electronic).

Hu:2014:RKP

[HS14] Shengda Hu and Manuele Santoprete. Regularization of the Kepler problem on the three-sphere. *Canadian Journal of Mathematics = Journal canadien de mathématiques*, 66(4):760–??, August 2014. CODEN CJMAAB. ISSN 0008-414X (print), 1496-4279 (electronic).

Hsiang:1993:GS

[Hsi93a] Wu-Yi Hsiang. The geometry of spheres. In *Differential geometry (Shanghai, 1991)*, pages 92–107. World Scientific Publishing Co. Pte. Ltd., P. O. Box 128, Farrer Road, Singapore 9128, 1993.

Hsiang:1993:SPPa

[Hsi93b] Wu-Yi Hsiang. On the sphere packing problem and the proof of Kepler's Conjecture. *International Journal of Mathematics*, 4(5): 739–831, 1993. CODEN ???? ISSN 0129-167X.

Hsiang:1993:SPPb

[Hsi93c] Wu-Yi Hsiang. On the sphere packing problem and the proof of Kepler's Conjecture. In *Differential geometry and topology (Alghero, 1992)*, pages 117–127. World Scientific Publishing Co. Pte. Ltd., P. O. Box 128, Farrer Road, Singapore 9128, 1993.

Hsiang:1994:GS

[Hsi94] Wu-Yi Hsiang. The geometry of spheres. *Normat: Nordisk matematisk tidskrift*, 42(1):1–12, 1994. ISSN 0801-3500.

Hsiang:1995:RCH

[Hsi95] Wu-Yi Hsiang. A rejoinder to T. C. Hales's article: "The status of the Kepler Conjecture" [Math. Intelligencer **16** (1994), no. 3, 47–58; MR1281754 (95g:52033)]. *The Mathematical Intelligencer*, 17(1):35–42, 1995. CODEN MAINDC. ISSN 0343-6993 (print), 1866-7414 (electronic).

Hsiang:2001:LAP

[Hsi01] Wu Yi Hsiang. *Least action principle of crystal formation of dense packing type and Kepler's conjecture*, volume 3 of *Nankai Tracts in Mathematics*. World Scientific Publishing Co. Pte. Ltd., P. O. Box 128, Farrer Road, Singapore 9128, 2001. ISBN 981-02-4670-6. xxii + 402 pp. LCCN QA166.7 .H85 2001. With a foreword by S. S. Chern.

Hales:2000:ARM

[HSP00] T. C. Hales, P. Sarnak, and M. C. Pugh. Advances in random matrix theory, zeta functions, and sphere packing. *Proceedings of the National Academy of Sciences of the United States of America*, 97(24):12963–12964, November 21, 2000. CODEN PNASA6. ISSN 0027-8424 (print), 1091-6490 (electronic). URL `http://www.jstor.org/stable/123637`.

Hopkins:2010:SCM

[HST10] Adam B. Hopkins, Frank H. Stillinger, and Salvatore Torquato. Spherical codes, maximal local packing density, and the golden ratio. *Journal of Mathematical Physics*, 51(4):043302, April 2010. CODEN JMAPAQ. ISSN 0022-2488 (print), 1089-7658 (electronic), 1527-2427. URL `http://jmp.aip.org/resource/1/jmapaq/v51/i4/p043302_s1`.

Hong:2014:MSI

[HY14] Hoon Hong and Chee-Keng Yap, editors. *Mathematical Software — ICMS 2014: 4th International Conference, Seoul, South Korea, August 5–9, 2014. Proceedings*, volume 8592 of *Lecture Notes in Computer Science*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2014. ISBN 3-662-44198-5, 3-662-44199-3 (e-book). LCCN QA76.95.

Henk:2000:KIC

[HZ00] Martin Henk and Günter M. Ziegler. Kugeln im Computer—die Kepler-Vermutung. (German) [Spheres in the computer — the Kepler conjecture]. In *Alles Mathematik. (German) [All mathematics]*, pages 121–143. Friedrich Vieweg und Sohn, Braunschweig, Germany, 2000.

IEEE:2007:ISV

[IEE07] IEEE, editor. *4th International Symposium on Voronoi Diagrams in Science and Engineering (ISVD 2007): School of Computing, University of Glamorgan, Pontyppridd, Wales, UK*. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 2007. ISBN ???? LCCN ????

Imamichi:2007:MSS

[IN07] Takashi Imamichi and Hiroshi Nagamochi. A multi-sphere scheme for 2D and 3D packing problems. In Stützle et al. [SBH07], pages 207–211. ISBN 3-540-74445-2.

Joswig:2012:KHB

[Jos12] Michael Joswig. From Kepler to Hales, and back to Hilbert. *Documenta mathematica*, ??:439–446, 2012. ISSN 1431-0635. Extra volume: Optimization stories.

Jonasson:2000:CTP

[JS00] Johan Jonasson and Oded Schramm. On the cover time of planar graphs. *Electronic Communications in Probability*, 5:10:85–10:90, 2000. CODEN ???? ISSN 1083-589X. URL `http://ecp.ejpecp.org/article/view/1022`.

Jiao:2009:OPS

[JST09] Y. Jiao, F. H. Stillinger, and S. Torquato. Optimal packings of superballs. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 79(4):041309, ???? 2009. CODEN PLEEE8. ISSN 1539-3755 (print), 1550-2376 (electronic). URL `http://link.aps.org/doi/10.1103/PhysRevE.79.041309`.

Jodrey:1985:CSC

[JT85] W. S. Jodrey and E. M. Tory. Computer simulation of close random packing of equal spheres. *Physical Review A (Atomic, Molecular, and Optical Physics)*, 32(4):2347–2351, October 1985. CODEN PLRAAN. ISSN 1050-2947 (print), 1094-1622, 1538-4446, 1538-4519. URL `http://link.aps.org/doi/10.1103/PhysRevA.32.2347`.

Jiao:2011:MRJ

[JT11] Yang Jiao and Salvatore Torquato. Maximally random jammed packings of Platonic solids: hyperuniform long-range correlations and isostaticity. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 84(4 (part 1)):041309, October 2011. CODEN PLEEE8. ISSN 1550-2376.

Januszewski:2023:PBC

[JZ23] Janusz Januszewski and Lukasz Zielonka. Packing batches of cubes into a single bin. *Information Processing Letters*, 180 (??):Article 106337, February 2023. CODEN IFPLAT. ISSN 0020-0190 (print), 1872-6119 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0020019022000941`.

Kao:2008:EA

[Kao08] Ming-Yang Kao, editor. *Encyclopedia of algorithms*. Springer reference. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2008. ISBN 0-387-30162-3, 0-387-30770-2. liii + 1166 pp. LCCN QA9.58 .E52 2007eb; QA9.58 .E52 2007ebeb; QA9.58; QA9.58 .E52 2007.

Kasner:1943:NNA

[Kas43] Edward Kasner. Note on non-Apollonian packing in space. *Scripta Mathematica*, 9(??):26, ???? 1943. ISSN 0036-9713.

Kallus:2009:DPP

[KEG09] Y. Kallus, V. Elser, and S. Gravel. Dense periodic packings of tetrahedra with small repeating units. *arXiv.org*, page ??, October 27, 2009. URL `http://arxiv.org/abs/0910.5226`. Published in [KEG10].

Kallus:2010:DPP

[KEG10] Yoav Kallus, Veit Elser, and Simon Gravel. Dense periodic packings of tetrahedra with small repeating units. *Discrete and Computational Geometry*, 44(2):245–252, September 2010. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Kelner:2004:SPE

[Kel04] Jonathan A. Kelner. Spectral partitioning, eigenvalue bounds, and circle packings for graphs of bounded genus. In ACM [ACM04], pages 455–464. ISBN 1-58113-852-0. LCCN QA75.5 .A22 2004.

Kelner:2006:SPE

[Kel06] Jonathan A. Kelner. Spectral partitioning, eigenvalue bounds, and circle packings for graphs of bounded genus. *SIAM Journal on Computing*, 35(4):882–902, ???? 2006. CODEN SMJCAT. ISSN 0097-5397 (print), 1095-7111 (electronic).

Kepler:1611:SSN

[Kep11] Johannes Kepler. *Strena, Seu, de Nive Sexangula*. Godfrey Tampach, Frankfurt-am-Main, Germany, 1611. This book contains the original formulation of the now-famous Kepler Sphere Packing Conjecture. English translation in [Kep66].

Kepler:1966:SCS

[Kep66] Johannes Kepler, editor. *The six-cornered snowflake*. Clarendon Press, Oxford, UK, 1966. ISBN 020. xvi + 75 pp. LCCN QC929.S7 K413. 21/-. Translated from the Latin by Colin Hardie, with essays by L. L. Whyte and B. F. J. Mason. Text in Latin with English translation on facing page. Notes and commentaries in English. Originally published in [Kep11].

Khirevich:2015:CFG

[KGT15] Siarhei Khirevich, Irina Ginzburg, and Ulrich Tallarek. Coarse- and fine-grid numerical behavior of MRT/TRT lattice-Boltzmann schemes in regular and random sphere packings. *Journal of Computational Physics*, 281(??):708–742, January 15, 2015. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0021999114007207.

Khezeli:2022:CEI

[Khe22] Ali Khezeli. Counter examples to invariant circle packing. *Annales de l'Institut Henri Poincaré. Probabilités et Statistiques*, 58(4):1981–1997, November 2022. CODEN AHPBAR. ISSN 0246-0203 (print), 1778-7017 (electronic). URL https://projecteuclid.org/journals/annales-de-linstitut-henri-poincare-probabilites-et-statistiques/volume-58/issue-4/Counter-examples-to-invariant-circle-packing/10.1214/21-AIHP1234.full.

Kuperberg:1990:DLP

[KK90] G. Kuperberg and W. Kuperberg. Double-lattice packings of convex bodies in the plane. *Discrete and Computational Geometry*, 5 (1):389–397, December 1990. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Klarreich:2000:FH

[Kla00] Erica G. Klarreich. Foams and honeycombs. *American Scientist*, 88(2):150–161, March/April 2000. CODEN AMSCAC. ISSN 0003-0996 (print), 1545-2786 (electronic). URL http://www.americanscientist.org/issues/feature/2000/2/foams-and-honeycombs.

Klarreich:2019:MMF

[Kla19] Erica Klarreich. Out of a magic math function, one solution to rule them all: Mathematicians used "magic functions" to prove that two highly symmetric lattices solve a myriad of problems in eight- and 24-dimensional space. *Quanta Magazine*, ??(??):??, May 13, 2019. URL `https://arxiv.org/pdf/1902.05438.pdf; https://www.quantamagazine.org/universal-math-solutions-in-dimensions-8-and-24-20190513/`.

Kao:2022:FTL

[KOT22] Chiu-Yen Kao, Braxton Osting, and Jackson C. Turner. Flat tori with large Laplacian eigenvalues in dimensions up to eight. *arXiv.org*, ??(??):18, February 16, 2022. URL `http://arxiv.org/abs/2202.08351`.

Kaliszyk:2013:ARS

[KU13] Cezary Kaliszyk and Josef Urban. Automated reasoning service for HOL Light. In Carette et al. [CAL+13], pages 120–135. ISBN 3-642-39319-5 (paperback), 3-642-39320-9 (e-book). LCCN QA76.9.M35 I58 2013.

Kunyavskii:1992:SPC

[Kun92] Boris È. Kunyavskii. Sphere packings centered at S-units of algebraic tori. *Lecture Notes in Mathematics*, 1518:108–121, 1992. CODEN LNMAA2. ISBN 3-540-55651-6 (print), 3-540-47267-3 (e-book). ISSN 0075-8434 (print), 1617-9692 (electronic). URL `http://link.springer.com/chapter/10.1007/BFb0087996/`.

Kuperberg:2007:OAP

[Kup07] Wlodzimierz Kuperberg. Optimal arrangements in packing congruent balls in a spherical container. *Discrete and Computational Geometry*, 37(2):205–212, February 2007. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Lagarias:2002:BLD

[Lag02] J. C. Lagarias. Bounds for local density of sphere packings and the Kepler Conjecture. *Discrete and Computational Geometry*, 27(2):165–193, January 2002. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic). URL `http://link.springer.de/link/service/journals/00454/contents/01/0060/`.

Lagarias:2011:KCP

[Lag11a] Jeffrey C. Lagarias. The Kepler Conjecture and its proof. In *The Kepler Conjecture: the Hales–Ferguson proof by Thomas C. Hales and Samuel P. Ferguson* [Lag11b], chapter 1, pages 3–26.

ISBN 1-4614-1128-9 (paperback), 1-4614-1129-7 (e-book). LCCN QA166.7 .K47 2011.

Lagarias:2011:KCH

[Lag11b] Jeffrey C. Lagarias, editor. *The Kepler Conjecture: the Hales–Ferguson proof by Thomas C. Hales and Samuel P. Ferguson*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2011. ISBN 1-4614-1128-9 (paperback), 1-4614-1129-7 (e-book). xiv + 456 pp. LCCN QA166.7 .K47 2011.

Leech:1964:SSP

[Lee64] John Leech. Some sphere packings in higher space. *Canadian Journal of Mathematics = Journal canadien de mathématiques*, 16(??):657–682, ???? 1964. CODEN CJMAAB. ISSN 0008-414X (print), 1496-4279 (electronic).

Leech:1967:FDN

[Lee67a] John Leech. Five dimensional non-lattice sphere packings. *Bulletin canadien de mathématiques = Canadian Mathematical Bulletin*, 10(??):387–394, ???? 1967. CODEN CMBUA3. ISSN 0008-4395 (print), 1496-4287 (electronic).

Leech:1967:NSP

[Lee67b] John Leech. Notes on sphere packings. *Canadian Journal of Mathematics = Journal canadien de mathématiques*, 19(??):251–267, ???? 1967. CODEN CJMAAB. ISSN 0008-414X (print), 1496-4279 (electronic).

Leech:1969:SSD

[Lee69] John Leech. Six and seven dimensional non-lattice sphere packings. *Bulletin canadien de mathématiques = Canadian Mathematical Bulletin*, 12(??):151–156, ???? 1969. CODEN CMBUA3. ISSN 0008-4395 (print), 1496-4287 (electronic).

Leppmeier:1997:KWT

[Lep97] Max Leppmeier. Kugelpackungen und Wurstkatastrophen oder Zur Theorie der finiten und infiniten Packungen. (German) [Sphere packings and sausage disasters or On the theory of finite and infinite packings]. In *Überblicke Mathematik 1996/97. (German) [Views of Mathematics 1996/97]*, Überbl. Math., pages 96–110. Friedrich Vieweg und Sohn, Braunschweig, Germany, 1997.

Lai:2023:PBT

[LHXG23] Xiangjing Lai, Jin-Kao Hao, Renbin Xiao, and Fred Glover. Perturbation-based thresholding search for packing equal circles and spheres. *INFORMS Journal on Computing*, 35(4):725–746, July/August 2023. CODEN ???? ISSN 1091-9856 (print), 1526-5528 (electronic). URL `https://pubsonline.informs.org/doi/full/10.1287/ijoc.2023.1290`.

Li:2013:SCA

[LJ13] Yanheng Li and Wei Ji. Stability and convergence analysis of a dynamics-based collective method for random sphere packing. *Journal of Computational Physics*, 250(??):373–387, October 1, 2013. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S002199911300363X`.

Lintzmayer:2019:OCS

[LMX19] Carla Negri Lintzmayer, Flávio Keidi Miyazawa, and Eduardo Candido Xavier. Online circle and sphere packing. *Theoretical Computer Science*, 776(??):75–94, July 12, 2019. CODEN TCSCDI. ISSN 0304-3975 (print), 1879-2294 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0304397519300179`.

Lozano:2016:EAG

[LRCG16] Elias Lozano, Deane Roehl, Waldemar Celes, and Marcelo Gattass. An efficient algorithm to generate random sphere packs in arbitrary domains. *Computers and Mathematics with Applications*, 71(8):1586–1601, April 2016. CODEN CMAPDK. ISSN 0898-1221 (print), 1873-7668 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0898122116300864`.

Leech:1971:SPE

[LS71] John Leech and N. J. A. Sloane. Sphere packings and error-correcting codes. *Canadian Journal of Mathematics = Journal canadien de mathématiques*, 23(??):718–745, ???? 1971. CODEN CJMAAB. ISSN 0008-414X (print), 1496-4279 (electronic).

Li:2000:BAF

[LTÜ00] X.-Y. Li, S.-H. Teng, and A. Üngör. Biting: advancing front meets sphere packing. *International Journal for Numerical Methods in*

Engineering, 49(1-2):61–81, 2000. CODEN IJNMBH. ISSN 0029-5981.

Li:2013:KBH

[LTX+13] Ziqiang Li, Zhuojun Tian, Yanfang Xie, Rong Huang, and Jiyang Tan. A knowledge-based heuristic particle swarm optimization approach with the adjustment strategy for the weighted circle packing problem. *Computers and Mathematics with Applications*, 66(10):1758–1769, December 2013. CODEN CMAPDK. ISSN 0898-1221 (print), 1873-7668 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0898122113004926.

Lagarias:2012:MPR

[LZ12] Jeffrey C. Lagarias and Chuanming Zong. Mysteries in packing regular tetrahedra. *Notices of the American Mathematical Society*, 59(11):1540–1549, December 2012. CODEN AMNOAN. ISSN 0002-9920 (print), 1088-9477 (electronic). URL http://www.ams.org/notices/201211/rtx121101540p.pdf.

Li:2010:MPD

[LZLX10] ShuiXiang Li, Jian Zhao, Peng Lu, and Yu Xie. Maximum packing densities of basic 3D objects. *Chinese Science Bulletin*, 55(2):114–119, January 2010.

Marsaglia:1985:CVR

[Mar85] George Marsaglia. A current view of random number generators. In Billard [Bil85], pages 3–10. ISBN 0-444-87725-8. LCCN QA276.4 .S95 1984. URL http://stat.fsu.edu/pub/diehard/; http://www.evensen.org/marsaglia/keynote.ps.

Markot:2007:IMV

[Mar07] Mihály Csaba Markót. Interval methods for verifying structural optimality of circle packing configurations in the unit square. *Journal of Computational and Applied Mathematics*, 199(2):353–357, February 15, 2007. CODEN JCAMDI. ISSN 0377-0427 (print), 1879-1778 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0377042705007715.

Marchal:2011:SKC

[Mar11] Christian Marchal. Study of the Kepler's conjecture: the problem of the closest packing. *Mathematische Zeitschrift*, 267(3-4):737–765, 2011. CODEN MAZEAX. ISSN 0025-5874.

Mathe:1993:KG

[Mát93] Katalin Bognár Máthé. Über Kugelsysteme unter Geräumigkeitsbedingungen. (German) [On sphere systems under spaciousness conditions]. *Studia Sci. Math. Hungar.*, 28(3-4):431–445, 1993. CODEN SSMHAX. ISSN 0081-6906.

Max:1991:CAS

[Max91] Nelson L. Max. Computer assisted sphere packing in higher dimensions. In *IEEE Visualization*, pages 102–108. IEEE Computer Society Press, 1109 Spring Street, Suite 300, Silver Spring, MD 20910, USA, 1991.

Markot:2006:RAR

[MC06] M. C. Markót and T. Csendes. A reliable area reduction technique for solving circle packing problems. *Computing*, 77(2):147–162, April 2006. CODEN CMPTA2. ISSN 0010-485X (print), 1436-5057 (electronic). URL `http://www.springerlink.com/openurl.asp?genre=article&issn=0010-485X&volume=77&issue=2&spage=147`.

Minkowski:1904:DGL

[Min04] H. Minkowski. Dichteste gitterförmige Lagerung kongruenter Körper. (German) [Closest lattice packing of congruent bodies]. *Nachr. K. Ges. Wiss. Göttingen*, ??(??):311–355, ???? 1904. The 'proof' of a packing theorem in this paper was later shown to be wrong; see [LZ12, pages 1543–1544].

Mohar:1993:CPR

[Moh93] Bojan Mohar. Circle packing representation in the plane and other surfaces. *ACM SIGACT News*, 24(1):59, Winter 1993. CODEN SIGNDM. ISSN 0163-5700 (print), 1943-5827 (electronic).

Morgan:2005:BRB

[Mor05] Frank Morgan. Book review: *Kepler's Conjecture* and Hales' Proof. *Notices of the American Mathematical Society*, 52(1):44–47, January 2005. CODEN AMNOAN. ISSN 0002-9920 (print), 1088-9477 (electronic). URL `http://www.ams.org/notices/200501/rev-morgan.pdf`. Review of [Szp03a].

Molnar:2002:BTO

[MPS02] E. Molnár, I. Prok, and J. Szirmai. Bestimmung der transitiven optimalen Kugelpackungen für die 29 Raumgruppen, die Coxetersche Spiegelungsuntergruppen enthalten. (German) [Characterization of transitive optimal sphere packings for the 29 space groups containing Coxeter reflection subgroups]. *Studia Sci. Math. Hungar.*, 39(3-4):443–483, 2002. CODEN SSMHAX. ISSN 0081-6906.

Miyazawa:2016:PTA

[MPS+16] Flávio K. Miyazawa, Lehilton L. C. Pedrosa, Rafael C. S. Schouery, Maxim Sviridenko, and Yoshiko Wakabayashi. Polynomial-time approximation schemes for circle and other packing problems. *Algorithmica*, 76(2):536–568, October 2016. CODEN ALGOEJ. ISSN 0178-4617 (print), 1432-0541 (electronic). URL http://link.springer.com/article/10.1007/s00453-015-0052-4.

McKay:2002:AAA

[MS02] Bob McKay and J. K. Slaney, editors. *AI 2002: advances in artificial intelligence: 15th Australian Joint Conference on Artificial Intelligence, Canberra, Australia, December 2–6, 2002: Proceedings*, volume 2557 of *Lecture Notes in Artificial Intelligence and Lecture Notes in Computer Science*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2002. CODEN LNCSD9. ISBN 3-540-00197-2 (paperback). ISSN 0302-9743 (print), 1611-3349 (electronic). LCCN Q334 .A97 2002. URL http://link.springer-ny.com/link/service/series/0558/tocs/t2557.htm; http://www.springerlink.com/openurl.asp?genre=issue&issn=0302-9743&volume=2557.

March:2002:EVF

[MT02a] N. H. March and M. P. Tosi. Excluded volume, free volume and hard sphere packing. In *Introduction to Liquid State Physics* [MT02b], pages 29–50. ISBN 981-02-4652-8 (paperback), 981-02-4639-0, 981-277-848-9 (e-book). LCCN QC145.2 .M42 2002eb. URL http://www.worldscientific.com/doi/abs/10.1142/9789812778482_0002.

March:2002:ILS

[MT02b] Norman H. (Norman Henry) March and M. P. Tosi. *Introduction to Liquid State Physics*. World Scientific Publishing Co. Pte. Ltd., P. O. Box 128, Farrer Road, Singapore 9128, 2002. ISBN 981-02-4652-8 (paperback), 981-02-4639-0, 981-277-848-9 (e-book). xvii + 431 pp. LCCN QC145.2 .M42 2002eb. URL http://site.ebrary.com/lib/princeton/Doc?id=10201245; http://site.ebrary.com/lib/yale/Doc?id=10201245; http://www.worldscientific.com/worldscibooks/10.1142/4717.

Marcotte:2013:ELP

[MT13] Étienne Marcotte and Salvatore Torquato. Efficient linear programming algorithm to generate the densest lattice sphere packings. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 87(6), June 2013. CODEN PLEEE8. ISSN 1539-3755 (print), 1550-2376 (electronic).

Muder:1993:NBL

[Mud93] Douglas J. Muder. A new bound on the local density of sphere packings. *Discrete and Computational Geometry*, 10(1):351–375, December 1993. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Muses:1997:DFA

[Mus97] C. Musès. The dimensional family approach in (hyper)sphere packing: a typological study of new patterns, structures, and interdimensional functions. *Applied Mathematics and Computation*, 88(1):1–26, December 15, 1997. CODEN AMHCBQ. ISSN 0096-3003 (print), 1873-5649 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0096300397000040`. See errata [Ano97, Mus98].

Muses:1998:EDF

[Mus98] C. Musès. Erratum: "The dimensional family approach in (hyper)sphere packing: a typological study for new patterns, structures, and interdimensional functions": Appl. Math. Comput. **88** (1997). *Applied Mathematics and Computation*, 97(2–3):295, December 15, 1998. CODEN AMHCBQ. ISSN 0096-3003 (print), 1873-5649 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0096300398000307`. See [Mus97, Ano97].

Muses:2000:VKC

[Mus00] C. Musès. Validating Kepler's Conjecture: a new approach. *Applied Mathematics and Computation*, 110(1):99–104, 2000. CODEN AMHCBQ. ISSN 0096-3003 (print), 1873-5649 (electronic). URL `http://www.elsevier.nl/gej-ng/29/17/20/83/21/24/abstract.html`; `http://www.elsevier.nl/gej-ng/29/17/20/83/21/24/article.pdf`.

Muraz:2005:LBD

[MVG05] G. Muraz and J.-L. Verger-Gaugry. On lower bounds of the density of Delone sets and holes in sequences of sphere packings. *Experimental Mathematics*, 14(1):47–57, ???? 2005. CODEN ???? ISSN 1058-6458 (print), 1944-950X (electronic). URL http://projecteuclid.org/euclid.em/1120145569.

Nipkow:2006:FTG

[NBS06] Tobias Nipkow, Gertrud Bauer, and Paula Schultz. Flyspeck. I. Tame graphs. In *Automated reasoning*, volume 4130 of *Lecture Notes in Comput. Sci.*, pages 21–35. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2006.

Nipkow:2007:FTG

[NBS07] Tobias Nipkow, Gertrud Bauer, and Paula Schultz. Flyspeck I. Tame graphs. In Furbach and Shankar [FS07], pages 21–35. ISBN 3-540-37187-7 (paperback), 3-540-37188-5 (e-book). ISSN 0302-9743 (print), 1611-3349 (electronic). LCCN QA76.9.A96 I33 2006. URL http://WX7CF7ZP2H.search.serialssolutions.com/?V=1.0&L=WX7CF7ZP2H&S=JCs&C=TC.

NIST:2014:CDM

[NIS14] NIST. The clumping density of many things seems to be a standard. *Research & Development*, ??(??):??, June 11, 2014. CODEN REDEEA. ISSN 0746-9179. URL http://www.rdmag.com/news/2014/06/nist-clumping-density-many-things-seems-be-standard. See research in [ZRD+14].

Nurmela:1999:ABO

[NÖadS99] Kari J. Nurmela, Patric R. J. Östergård, and Rainer aus dem Spring. Asymptotic behavior of optimal circle packings in a square. *Bulletin canadien de mathématiques = Canadian Mathematical Bulletin*, 42(3):380–385, September 1999. CODEN CMBUA3. ISSN 0008-4395 (print), 1496-4287 (electronic).

Northshield:2006:IAC

[Nor06] S. Northshield. On integral Apollonian circle packings. *Journal of Number Theory*, 119(2):171–193, August 2006. CODEN JNUTA9. ISSN 0022-314X (print), 1096-1658 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0022314X05002301.

Obua:2005:PBR

[Obu05] Steven Obua. Proving bounds for real linear programs in Isabelle/HOL. In Hurd and Melham [HM05], pages 227–244. ISBN 3-540-28372-2 (paperback). ISSN 0302-9743 (print), 1611-3349 (electronic). LCCN QA76.9.A96 T655 2005. URL http://springerlink.metapress.com/openurl.asp?genre=issue&issn=0302-9743&volume=3603; http://www.loc.gov/catdir/enhancements/fy0663/2005930490-d.html; http://www.loc.gov/catdir/toc/fy0612/2005930490.html.

Oesterle:2000:DME

[Oes00] Joseph Oesterlé. Densité maximale des empilements de sphères en dimension 3 (d'après Thomas C. Hales et Samuel P. Ferguson). (French) [maximal 3-dimensional sphere-packing density (according to Thomas C. Hales et Samuel P. Ferguson)]. *Astérisque*, 266 (863(5)):405–413, 2000. ISSN 0303-1179. Séminaire Bourbaki, Vol. 1998/99. Exp. no. 863, 5.

Obua:2009:FIB

[ON09] Steven Obua and Tobias Nipkow. Flyspeck II: the basic linear programs. *Annals of Mathematics and Artificial Intelligence*, 56 (3-4):245–272, 2009. CODEN AMAIEC. ISSN 1012-2443 (print), 1573-7470 (electronic).

Phillips:2012:OFS

[PAHG12] Carolyn L. Phillips, Joshua A. Anderson, Greg Huber, and Sharon C. Glotzer. Optimal filling of shapes. *arxiv.org*, ??(??):??, February 11, 2012. URL http://arxiv.org/abs/1202.2450; http://www.rdmag.com/News/2012/05/Life-Science-Mathematics-Nanotechnology-Twist-on-ancient-math-problem-could-improve-medicine-microelectronics/. arXiv:1202.2450v1.

Peretz:2002:ICM

[Per02] Ronen Peretz. Iterations of concave maps, the Perron–Frobenius theory, and applications to circle packings. *Electronic Journal of Linear Algebra*, 9(1):197–254, 2002. CODEN ???? ISSN 1081-3810 (print), 1537-9582 (electronic). URL http://repository.uwyo.edu/ela/vol9/iss1/20.

Pitici:2019:BWM

[Pit19] Mircea Pitici, editor. *The Best Writing On Mathematics: 2019*, volume 2019. Princeton University Press, Princeton, NJ, USA,

2019. ISBN 0-691-19835-7, 0-691-19867-5. xvi + 272 + 16 pp. LCCN QA8.6 .B337 2019.

Pinter:2016:GOF

[PKC16] Janos Pinter, Frank J. Kampas, and Ignacio Castillo. Globally optimized finite packings of arbitrary size spheres in R^d. Web document, March 31, 2016. URL `http://www.optimization-online.org/DB_HTML/2016/03/5392.html`.

Pfender:2004:KNS

[PZ04] Florian Pfender and Günter M. Ziegler. Kissing numbers, sphere packings, and some unexpected proofs. *Notices of the American Mathematical Society*, 51(8):873–883, September 2004. CODEN AMNOAN. ISSN 0002-9920 (print), 1088-9477 (electronic).

Parisi:2006:APH

[PZ06] G. Parisi and F. Zamponi. Amorphous packings of hard spheres in large space dimension. *Computing Research Repository (CoRR)*, abs/cond-mat/0601573, 2006. URL `http://arxiv.org/abs/cond-mat/0601573`. informal publication.

Radin:2004:OOS

[Rad04] Charles Radin. Orbits of orbs: Sphere packing meets Penrose tilings. *American Mathematical Monthly*, 111(2):137–149, February 2004. CODEN AMMYAE. ISSN 0002-9890 (print), 1930-0972 (electronic). URL `http://www.jstor.org/stable/4145214`.

Renyi:1958:ODP

[Rén58] A. Rényi. On a one-dimensional problem concerning random space filling. *Magyar Tud. Akad. Mat. Kutató Int. Közl.*, 3(1–2):109–127, ???? 1958.

Rogers:1964:PC

[Rog64] C. A. (Claude Ambrose) Rogers. *Packing and covering*, volume 54 of *Cambridge tracts in mathematics and mathematical physics*. Cambridge University Press, Cambridge, UK, 1964. viii + 111 pp. LCCN QA248 .R64.

Rogers:1968:UPR

[Rog68] Claude Ambrose Rogers. *Ukladki i pokrytije. (Russian) [Laying and covering]*. ????, ????, 1968. 134 pp. LCCN QA611 .R6317.

Rohde:2011:OSC

[Roh11] Steffen Rohde. Oded Schramm: From circle packing to SLE. *Annals of Probability*, 39(5):1621–1667, September 2011. CODEN APBYAE. ISSN 0091-1798 (print), 2168-894X (electronic). URL http://projecteuclid.org/euclid.aop/1318940778.

Rintoul:1998:HSS

[RT98] M. D. Rintoul and S. S. Torquato. Hard-sphere statistics along the metastable amorphous branch. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 58 (??):532–537, ???? 1998. CODEN PLEEE8. ISSN 1539-3755 (print), 1550-2376 (electronic).

Ramezanpour:2012:CAS

[RZ12] A. Ramezanpour and R. Zecchina. Cavity approach to sphere packing in Hamming space. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 85 (2):021106, February 6, 2012. CODEN PLEEE8. ISSN 1539-3755 (print), 1550-2376 (electronic). URL https://link.aps.org/doi/10.1103/PhysRevE.85.021106.

Smith:2010:AJS

[SAF10] Kyle C. Smith, Meheboob Alam, and Timothy S. Fisher. Athermal jamming of soft frictionless Platonic solids. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 82(5 (part 1)):051304, November 2010. CODEN PLEEE8. ISSN 1550-2376.

Sahai:2006:HBS

[Sah06] Anant Sahai. How to beat the sphere-packing bound with feedback. *Computing Research Repository (CoRR)*, abs/cs/0610139, 2006. URL http://arxiv.org/abs/cs/0610139. informal publication.

Slind:2004:TPH

[SBG04] Konrad Slind, Annette Bunker, and Ganesh Gopalakrishnan, editors. *Theorem proving in higher order logics: 17th international conference, TPHOLs 2004, Park City, Utah, USA, September 14–17, 2004: proceedings*, volume 3223 of *Lecture notes in computer science*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2004. ISBN 3-540-23017-3 (paperback). ISSN 0302-9743 (print), 1611-3349 (electronic).

LCCN QA76.9.A96 T655 2004. URL http://www.loc.gov/catdir/enhancements/fy0823/2004111288-d.html; http://www.loc.gov/catdir/summary/eng0801/2004111288.html; http://www.loc.gov/catdir/toc/fy0716/2004111288.html; http://www.springerlink.com/openurl.asp?genre=issue&issn=0302-9743&volume=3223.

Stutzle:2007:ESL

[SBH07] Thomas Stützle, Mauro Birattari, and Holger H. Hoos, editors. *Engineering Stochastic Local Search Algorithms. Designing, Implementing and Analyzing Effective Heuristics, International Workshop, SLS 2007, Brussels, Belgium, September 6–8, 2007, Proceedings*, volume 4638 of *Lecture Notes in Computer Science*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2007. ISBN 3-540-74445-2.

Schrijver:1979:PCC

[Sch79] A. Schrijver. *Packing and covering in combinatorics*, volume 106 of *Mathematical centre tracts*. Mathematisch Centrum, Amsterdam, The Netherlands, 1979. ISBN 90-6196-180-7. 313 pp. LCCN QA166.7 .P32.

Schnell:2000:FVH

[Sch00] Uwe Schnell. FCC versus HCP via parametric density. *Discrete Mathematics*, 211(1-3):269–274, 2000. CODEN DSMHA4. ISSN 0012-365X.

Schurmann:2006:PSC

[Sch06] Achill Schürmann. On packing spheres into containers. *Documenta mathematica*, 11:393–406 (electronic), 2006. ISSN 1431-0635.

Skoge:2006:PHH

[SDST06] Monica Skoge, Aleksandar Donev, Frank H. Stillinger, and Salvatore Torquato. Packing hyperspheres in high-dimensional Euclidean spaces. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 74(4):041127, October 2006. CODEN PLEEE8. ISSN 1539-3755 (print), 1550-2376 (electronic). URL http://link.aps.org/doi/10.1103/PhysRevE.74.041127.

Steele:1992:PA

[SE92] John Michael Steele and William F. Eddy, editors. *Probability and Algorithms*. National Academy Press, Washington, DC, USA,

1992. ISBN 0-309-04776-5. ix + 178 pp. LCCN QA273.P7953 1992. URL http://site.ebrary.com/lib/stanford/Doc?id=10056784; http://www.nap.edu/books/0309047765/html/.

Senechal:1981:WTF

[Sen81] Marjorie Senechal. Which tetrahedra fill space? *Mathematics Magazine*, 54(5):227–243, ???? 1981. CODEN MAMGA8. ISSN 0025-570X.

Sheydvasser:2019:QOS

[She19] Arseniy Sheydvasser. Quaternion orders and sphere packings. *Journal of Number Theory*, 204(??):41–98, November 2019. CODEN JNUTA9. ISSN 0022-314X (print), 1096-1658 (electronic). URL http://www.sciencedirect.com/science/article/pii/S0022314X19301192.

Schiftner:2009:PCS

[SHWP09] Alexander Schiftner, Mathias Höbinger, Johannes Wallner, and Helmut Pottmann. Packing circles and spheres on surfaces. *ACM Transactions on Graphics*, 28(5):139:1–139:8, December 2009. CODEN ATGRDF. ISSN 0730-0301 (print), 1557-7368 (electronic).

Sloane:1981:TSP

[Slo81] Neil J. A. Sloane. Tables of sphere packings and spherical codes. *IEEE Transactions on Information Theory*, 27(3):327–338, March 1981. CODEN IETTAW. ISSN 0018-9448 (print), 1557-9654 (electronic).

Sloane:1984:PS

[Slo84] N. J. A. Sloane. The packing of spheres. *Scientific American*, 250 (1):92–101, January 1984. CODEN SCAMAC. ISSN 0036-8733 (print), 1946-7087 (electronic).

Santini:2023:APC

[SMF23] Carlo Santini, Fabio Mangini, and Fabrizio Frezza. Apollonian packing of circles within ellipses. *Algorithms (Basel)*, 16(3), March 2023. CODEN ALGOCH. ISSN 1999-4893 (electronic). URL https://www.mdpi.com/1999-4893/16/3/129.

Smith:2023:AM

[SMKGS23] David Smith, Joseph Samuel Myers, Craig S. Kaplan, and Chaim Goodman-Strauss. An aperiodic monotile. *arXiv.org*, ??(??):89 + 57 figures, March 20, 2023. See press report [Ano23].

Solomon:1967:RPD

[Sol67] H. Solomon. Random packing density. In Lucien M. Le Cam and Jerzy Neyman, editors, *Proceedings of the Fifth Berkeley Symposium on Mathematical Statistics and Probability. Volume III. Physical Sciences*, volume 3, pages 119–134. University of California Press, Berkeley, CA, USA, 1967. LCCN QA276 .B4 v.3. URL http://projecteuclid.org/euclid.bsmsp/1200513624. Held at the Statistical Laboratory, University of California, June 21–July 18, 1965 and December 27, 1965–January 7, 1966.

Scardicchio:2008:EOD

[SST08] A. Scardicchio, F. H. Stillinger, and S. Torquato. Estimates of the optimal density of sphere packings in high dimensions. *Journal of Mathematical Physics*, 49(4):043301, April 2008. CODEN JMAPAQ. ISSN 0022-2488 (print), 1089-7658 (electronic), 1527-2427. URL http://jmp.aip.org/resource/1/jmapaq/v49/i4/p043301_s1.

Sloot:2002:CSIc

[STDH02] P. M. A. Sloot, C. J. Kenneth Tan, J. J. Dongarra, and A. G. Hoekstra, editors. *Computational Science–ICCS 2002: International Conference, Amsterdam, The Netherlands, April 21–24, 2002. Proceedings, Part III*, volume 2331 of *Lecture Notes in Computer Science*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 2002. CODEN LNCSD9. ISBN 3-540-43594-8 (paperback). ISSN 0302-9743 (print), 1611-3349 (electronic). LCCN QA75.5 .I13 2002. URL http://link.springer-ny.com/link/service/series/0558/tocs/t2331.htm.

Stephenson:1999:SSD

[Ste99] Paul Stephenson. Solitary solarians and densely packed spheres: From Stephen Hales to Thomas Hales. *Mathematical Gazette*, 83 (498):426–432, November 1999. CODEN MAGAAS. ISSN 0025-5572. URL http://www.jstor.org/stable/3620952.

Stephenson:2003:CPM

[Ste03] Kenneth Stephenson. Circle packing: a mathematical tale. *Notices of the American Mathematical Society*, 50(11):1376–1388, December 2003. CODEN AMNOAN. ISSN 0002-9920 (print), 1088-9477 (electronic).

Struik:1925:PIL

[Str28] D. J. Struik. Het probleem “De impletione loci”. (Dutch) [The problem “On Local Filling”]. *Nieuw Archief voor Wiskunde, Series 2*, 15(??):121–137, 1925–1928.

Schutte:1953:PDK

[SvdW53] K. Schütte and B. L. van der Waerden. Das Problem der dreizehn Kugeln. (German) [The problem of thirteen bullets]. *Mathematische Annalen*, 125(??):325–334, ???? 1953. CODEN MAANA3. ISSN 0025-5831 (print), 1432-1807 (electronic). URL http://link.springer.com/article/10.1007/BF01343127.

Szirmai:1993:OSP

[Szi93] Jenő Szirmai. Optimal sphere packings under some space groups. *Alkalmaz. Mat. Lapok*, 17(1–2):87–99 (1994), 1993. ISSN 0133-3399.

Szpiro:2003:KCH

[Szp03a] George Szpiro, editor. *Kepler's Conjecture: how some of the greatest minds in history helped solve one of the oldest math problems in the world*. Wiley, New York, NY, USA, 2003. ISBN 0-471-08601-0. viii + 296 pp. LCCN QA93 .S97 2003. URL http://www.loc.gov/catdir/bios/wiley046/2002014422.html; http://www.loc.gov/catdir/description/wiley039/2002014422.html; http://www.loc.gov/catdir/toc/wiley031/2002014422.html.

Szpiro:2003:MDP

[Szp03b] George Szpiro. Mathematics: Does the proof stack up? *Nature*, 424(6944):12–13, July 3, 2003. CODEN NATUAS. ISSN 0028-0836 (print), 1476-4687 (electronic). URL http://www.nature.com/nature/journal/v424/n6944/full/424012a.html.

Szpiro:2003:KC

[Szp03c] George G. Szpiro. *Kepler's conjecture*. Wiley, New York, NY, USA, 2003. ISBN 0-471-08601-0. viii + 296 pp. How some of the greatest minds in history helped solve one of the oldest math problems in the world.

Talata:1999:TKN

[Tal99] István Talata. The translative kissing number of tetrahedra is 18. *Discrete and Computational Geometry*, 22(2):231–248, September

1999. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Tamassia:1993:AOD

[Tam93] Roberto Tamassia. Algorithms for orthogonal drawings (abstract). *ACM SIGACT News*, 24(1):59, Winter 1993. CODEN SIGNDM. ISSN 0163-5700 (print), 1943-5827 (electronic).

Tanemura:1979:RCP

[Tan79] M. Tanemura. On random complete packing by discs. *Annals of the Institute of Statistical Mathematics (Tokyo)*, 31(Part B): 351–365, ???? 1979. CODEN AISXAD. ISSN 0020-3157 (print), 1572-9052 (electronic).

Toth:1989:FSP

[TGW89] Gábor Fejes Tóth, Peter Gritzmann, and J. M. Wills. Finite sphere packing and sphere covering. *Discrete and Computational Geometry*, 4(1):19–40, December 1989. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Trovato:2007:SSO

[THBM07] Antonio Trovato, Trinh Xuan Hoang, Jayanth R. Banavar, and Amos Maritan. Symmetry, shape, and order. *Proceedings of the National Academy of Sciences of the United States of America*, 104(49):19187–19192, December 2007. CODEN PNASA6. ISSN 0027-8424.

Thompson:1979:ECC

[Tho79] Thomas Miller Thompson. *From error-correcting codes through sphere packings to simple groups*. Thesis (Ph.D.), Department of Mathematics, University of California, Davis, Davis, CA, USA, 1979. 250 pp.

Thompson:1983:ECC

[Tho83] Thomas M. Thompson. *From error-correcting codes through sphere packings to simple groups*, volume 21 of *Carus mathematical monographs*. Mathematical Association of America, Washington, DC, USA, 1983. ISBN 0-88385-023-0. xiv + 228 pp. LCCN QA268 .T56 1983.

Torquato:2009:ACF

[TJ09a] S. Torquato and Y. Jiao. Analytical constructions of a family of dense tetrahedron packings and the role of symmetry. *arXiv.org*, page 16, December 21, 2009. URL http://arxiv.org/abs/0912.4210.

Torquato:2009:DPPb

[TJ09b] S. Torquato and Y. Jiao. Dense packings of polyhedra: Platonic and Archimedean solids. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 80 (4):041104:1–041104:21, 2009. CODEN PLEEE8. ISSN 1539-3755 (print), 1550-2376 (electronic).

Torquato:2009:DPPa

[TJ09c] S. Torquato and Y. Jiao. Dense packings of the Platonic and Archimedean solids. *Nature*, 460(7257):876–880, August 13, 2009. CODEN NATUAS. ISSN 0028-0836 (print), 1476-4687 (electronic). URL http://www.nature.com/nature/journal/v460/n7257/pdf/nature08239.pdf. See corrigendum [TJ10a].

Torquato:2010:DPP

[TJ10a] S. Torquato and Y. Jiao. Corrigendum: Dense packings of the Platonic and Archimedean solids (vol 460, pg 876, 2009). *Nature*, 463(7284):1106, February 25, 2010. CODEN NATUAS. ISSN 0028-0836. See [TJ09c].

Torquato:2010:ECF

[TJ10b] S. Torquato and Y. Jiao. Exact constructions of a family of dense periodic packings of tetrahedra. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 81 (4 (part 1)):041310, April 2010. CODEN PLEEE8. ISSN 1539-3755 (print), 1550-2376 (electronic).

Torquato:2012:OPD

[TJ12] Salvatore Torquato and Yang Jiao. Organizing principles for dense packings of nonspherical hard particles: not all shapes are created equal. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 86(1 (part 1)):011102, July 2012. CODEN PLEEE8. ISSN 1550-2376.

Toth:1993:PCC

[TK93] G. Fejes Tóth and W. Kuperberg. Packing and covering with convex sets. In Gruber and Wills [GW93], pages 799–860. ISBN 0-444-89598-1 (set of vols. A and B), 0-444-89596-5 (vol. A), 0-444-89597-3 (vol. B). LCCN QA639.5 .H36 1993.

Tankink:2013:FMD

[TKUG13] Carst Tankink, Cezary Kaliszyk, Josef Urban, and Herman Geuvers. Formal mathematics on display: a Wiki for Flyspeck. In Carette et al. [CAL+13], pages 152–167. ISBN 3-642-39319-5 (paperback). LCCN QA76.9.M35 I58 2013.

Toth:2006:GEF

[TL06] Gábor Fejes Toth and Jeffrey C. Lagarias. Guest editors' foreword [The Kepler Conjecture by Thomas C. Hales, with Samuel P. Ferguson]. *Discrete and Computational Geometry*, 36(1):1–3, July 2006. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Toma:2020:ERN

[Tom20] Radu Toma. Estimates for representation numbers of binary quadratic forms and Apollonian circle packings. *Journal of Number Theory*, 214(??):399–413, September 2020. CODEN JNUTA9. ISSN 0022-314X (print), 1096-1658 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0022314X20300883`.

Toth:1953:LEK

[Tót53] L. Fejes Tóth. *Lagerungen in der Ebene, auf der Kugeln und im Raum. (German) [Ball deposits in the plane and in space]*, volume 65 of *Grundlehren der mathematischen Wissenschaften in Einzeldarstellungen mit besonderer Berücksichtigung der Anwendungsgebiete*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 1953. x + 197 pp. See also second edition [Tót72].

Toth:1972:LEK

[Tót72] L. Fejes Tóth. *Lagerungen in der Ebene, auf der Kugeln und im Raum. (German) [Ball deposits in the plane and in space]*, volume 65 of *Grundlehren der mathematischen Wissenschaften in Einzeldarstellungen mit besonderer Berücksichtigung der Anwendungsgebiete*. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., second edition, 1972. ISBN 3-540-05477-4. xi + 238 pp. See also first edition [Tót53].

Toth:1999:MCP

[Tót99] L. Fejes Tóth. Minkowski circle packings on the sphere. *Discrete and Computational Geometry*, 22(2):161–166, September

1999. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic). URL http://link.springer.de/link/service/journals/00454/bibs/22n2p161.html.

Toth:2008:CCB

[Tót08] Gábor Fejes Tóth. Covering with convex bodies. In *Number theory & discrete geometry*, volume 6 of *Ramanujan Math. Soc. Lect. Notes Ser.*, pages 181–189. Ramanujan Mathematical Society, Mysore, India, 2008.

Torquato:2001:MGS

[TS01] S. Torquato and F. H. Stillinger. Multiplicity of generation, selection, and classification procedures for jammed hard-particle packings. *Journal of Physical Chemistry. B. Condensed matter, materials, surfaces, interfaces & biophysical*, 105(47):11849–11853, October 13, 2001. CODEN JPCBFK. ISSN 1089-5647 (print), 1520-6106 (electronic).

Torquato:2006:NCL

[TS06] S. Torquato and F. H. Stillinger. New conjectural lower bounds on the optimal density of sphere packings. *Experimental Mathematics*, 15(3):307–331, ???? 2006. CODEN ???? ISSN 1058-6458 (print), 1944-950X (electronic). URL http://projecteuclid.org/euclid.em/1175789761.

Torquato:2010:JHP

[TS10a] S. Torquato and F. H. Stillinger. Jammed hard-particle packings: From Kepler to Bernal and beyond. *Reviews of Modern Physics*, 82(3):2633–2672, July 2010. CODEN RMPHAT. ISSN 0034-6861 (print), 1538-4527 (electronic), 1539-0756. URL http://link.aps.org/doi/10.1103/RevModPhys.82.2633; http://rmp.aps.org/abstract/RMP/v82/i3/p2633_1. See note [TS10b].

Torquato:2010:PNJ

[TS10b] S. Torquato and F. H. Stillinger. Publisher's note: Jammed hard-particle packings: From Kepler to Bernal and beyond [Rev. Mod. Phys. **82**, 2633 (2010)]. *Reviews of Modern Physics*, 82(4):3197, October 2010. CODEN RMPHAT. ISSN 0034-6861 (print), 1538-4527 (electronic), 1539-0756. URL http://link.aps.org/doi/10.1103/RevModPhys.82.3197; http://rmp.aps.org/abstract/RMP/v82/i4/p3197_1. See [TS10a].

Torquato:2006:RSA

[TUS06] S. Torquato, O. U. Uche, and F. H. Stillinger. Random sequential addition of hard spheres in high Euclidean dimensions. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 74(6 (part 1)):061308, December 2006. CODEN PLEEE8. ISSN 1539-3755.

Verger-Gaugry:2001:RSP

[VG01] Jean-Louis Verger-Gaugry. Remarks on sphere packings, clusters and Hales Ferguson theorem. In *Séminaire de Théorie Spectrale et Géométrie, Vol. 19, Année 2000–2001*, volume 19 of *Sémin. Théor. Spectr. Géom.*, pages 165–177. Université Grenoble I, Saint-Martin-d'Hères, France, 2001.

Viazovska:2016:SPP

[Via16] Maryna Viazovska. The sphere packing problem in dimension 8. *arxiv.org*, ??(??):1–22, March 14, 2016. URL `http://arxiv.org/abs/1603.04246`.

vanMeel:2009:GFS

[vMFC09] J. A. van Meel, D. Frenkel, and P. Charbonneau. Geometrical frustration: a study of four-dimensional hard spheres. *Physical Review E (Statistical physics, plasmas, fluids, and related interdisciplinary topics)*, 79(3):030201, March 2009. CODEN PLEEE8. ISSN 1539-3755 (print), 1550-2376 (electronic). URL `http://link.aps.org/doi/10.1103/PhysRevE.79.030201`.

Wang:1999:PUS

[Wan99] Jie Wang. Packing of unequal spheres and automated radiosurgical treatment planning. *Journal of Combinatorial Optimization*, 3(4):453–463, 1999. CODEN JCOPFV. ISSN 1382-6905.

Wang:2000:MAO

[Wan00] Jie Wang. Medial axis and optimal locations for min-max sphere packing. *Journal of Combinatorial Optimization*, 4(4):487–503, 2000. CODEN JCOPFV. ISSN 1382-6905.

Weaire:1999:SHP

[Wea99] D. Weaire. A short history of packing problems. *Forma (Tokyo)*, 14(4):279–285, 1999. ISSN 0911-6036. Proceedings of the 2nd International Katachi U Symmetry Symposium, Part 1 (Tsukuba, 1999).

Weyl:1952:S

[Wey52] Hermann Weyl. *Symmetry*. Princeton University Press, Princeton, NJ, USA, 1952. ISBN 0-691-08045-3. 168 pp.

Weyl:1982:S

[Wey82] Hermann Weyl. *Symmetry*. Princeton University Press, Princeton, NJ, USA, 1982. ISBN 0-691-02374-3. 168 pp.

Weyl:1989:S

[Wey89] Hermann Weyl. *Symmetry*. Princeton University Press, Princeton, NJ, USA, 1989. ISBN 0-691-02374-3. 168 pp.

Xu:2013:PPM

[XGW13] Bai-Xiang Xu, Yang Gao, and Min-Zhong Wang. Particle packing and the mean theory. *Physics Letters A*, 377(3–4):145–147, 2013. CODEN PYLAAG. ISSN 0375-9601 (print), 1873-2429 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0375960112011772`.

Xiong:2020:SPD

[XLNQ20] Zikang Xiong, Liwei Liu, Jianhui Ning, and Hong Qin. Sphere packing design for experiments with mixtures. *Statistics & Probability Letters*, 164(??):Article 108807, September 2020. CODEN SPLTDC. ISSN 0167-7152 (print), 1879-2103 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0167715220301103`.

Yu:2014:CAP

[YLG+14] Zongqiao Yu, Lin Lu, Yanwen Guo, Rongfei Fan, Mingming Liu, and Wenping Wang. Content-aware photo collage using circle packing. *IEEE Transactions on Visualization and Computer Graphics*, 20(2):182–195, February 2014. CODEN ITVGEA. ISSN 1077-2626 (print), 1941-0506 (electronic), 2160-9306.

Zauner:2016:AFF

[Zau16] Thomas Zauner. Application of a force field algorithm for creating strongly correlated multiscale sphere packings. *Journal of Computational Physics*, 313(??):662–673, May 15, 2016. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999116001029`.

Zhang:1999:OPP

[ZBT+99] J. Zhang, R. Blaak, E. Trizac, J. A. Cuesta, and D. Frenkel. Optimal packing of polydisperse hard-sphere fluids. *Journal of Chemical Physics*, 110(11):5318–5324, 1999. CODEN JCPSA6. ISSN 0021-9606 (print), 1089-7690 (electronic).

Zhang:2014:OAS

[ZCT+14] Yong Zhang, Francis Y. L. Chin, Hing-Fung Ting, Xin Han, Chung Keung Poon, Yung H. Tsin, and Deshi Ye. Online algorithms for 1-space bounded 2-dimensional bin packing and square packing. *Theoretical Computer Science*, 554(??):135–149, October 16, 2014. CODEN TCSCDI. ISSN 0304-3975 (print), 1879-2294 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0304397514001716`.

Zong:1996:SPC

[ZD96] Chuanming Zong and James Joseph Dudziak, editors. *Strange phenomena in convex and discrete geometry*. Universitext. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 1996. ISBN 0-387-94734-5 (softcover). x + 158 pp. LCCN QA639.5 .Z66 1996.

Zinchenko:1994:ARC

[Zin94] Alexander Z. Zinchenko. Algorithm for random close packing of spheres with periodic boundary conditions. *Journal of Computational Physics*, 114(2):298–307, October 1994. CODEN JCTPAH. ISSN 0021-9991 (print), 1090-2716 (electronic). URL `http://www.sciencedirect.com/science/article/pii/S0021999184711685`.

Zong:1996:KNT

[Zon96] Chuanming Zong. The kissing numbers of tetrahedra. *Discrete and Computational Geometry*, 15(3):251–264, March 1996. CODEN DCGEER. ISSN 0179-5376 (print), 1432-0444 (electronic).

Zong:2006:CWC

[Zon06] Chuanming Zong. *The Cube: a Window to Convex and Discrete Geometry*, volume 168 of *Cambridge tracts in mathematics*. Cambridge University Press, Cambridge, UK, 2006. ISBN 0-521-85535-7 (hardcover). x + 174 pp. LCCN QA639.5 .Z64 2006. URL `http://www.loc.gov/catdir/enhancements/fy0642/2006296040-d.html`; `http://www.loc.gov/catdir/enhancements/fy0642/`

2006296040-t.html; http://www.loc.gov/catdir/enhancements/fy0733/2006296040-b.html.

Zong:2013:TPD

[Zon13] Chuanming Zong. On the translative packing densities of tetrahedra and cubooctahedra. *arXiv.org*, page 37, August 2, 2013. URL http://arxiv.org/abs/1208.0420.

Zong:2022:CAD

[Zon22] Chuanming Zong. A computer approach to determine the densest translative tetrahedron packings. *Experimental Mathematics*, 31 (1):21–41, 2022. CODEN ???? ISSN 1058-6458 (print), 1944-950X (electronic). URL http://www.tandfonline.com/doi/full/10.1080/10586458.2019.1582378.

Zangmeister:2014:PDR

[ZRD+14] Christopher D. Zangmeister, James G. Radney, Lance T. Dockery, Jessica T. Young, Xiaofei Ma, Rian You, and Michael R. Zachariah. Packing density of rigid aggregates is independent of scale. *Proceedings of the National Academy of Sciences of the United States of America*, ??(??):??, ???? 2014. CODEN PNASA6. ISSN 0027-8424 (print), 1091-6490 (electronic). URL http://www.pnas.org/content/early/2014/06/04/1403768111.abstract.

Zammataro:2007:ECM

[ZSRB07] Luca Zammataro, Guido Serini, Todd Rowland, and Federico Bussolino. Embryonic cleavage modeling as a computational approach to sphere packing problem. *Journal of Theoretical Biology*, 245(1): 77–82, 2007. CODEN JTBIAP. ISSN 0022-5193.

Zong:1999:SP

[ZT99] Chuanming Zong and J. (John) Talbot. *Sphere packings*. Universitext. Springer-Verlag, Berlin, Germany / Heidelberg, Germany / London, UK / etc., 1999. ISBN 0-387-98794-0. xiii + 241 pp. LCCN QA166.7 .Z66 1999. URL http://www.loc.gov/catdir/enhancements/fy0816/99015367-d.html; http://www.loc.gov/catdir/enhancements/fy0816/99015367-t.html.