dwb-notes-on-squares

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1 Annotated Bibliography

1.1 Hard Particle / Square / Sphere Simulations

- Wojciechowski and Frenkel, "Tetratic Phase in the Hard Square System?" [1]

- Torquato, "Metastability and crystallization in hard sphere systems" [2]

- Sturgeon and Stillinger, "Cavities in the hard-disk crystal: A Monte Carlo simulation study" [3] – The rigid-disk crystal near close packing

- Rintoul and Torquato, "Computer Simulations of dense hard-sphere systems" [4]

- Bernard, Krauth, and Wilson, "Event-chain Monte Carlo Algorithms for hard-sphere systems"

- Donev, Burton, Stillinger, Torquato, "Tetratic order in the phase behavior of a hard-rectangle system" [5]

- Liu and Luijten, "Generalized geometric cluster algorithm for fluid simulation" [6]

- Frenkel "Monte Carlo Methods in Various Ensembles" [7]

- Shell, Lecture notes, "Monte Carlo simulations in other ensembles" [8]

- Odriozola, "Replica Exchange Monte Carlo Applied to Hard Spheres" [9]

1.2   Parallel Tempering / Population Annealing

- Machta, "Strengths and Weaknesses of Parallel Tempering" [10]

- Machta and Ellis, "Monte Carlo Methods for Rough Free Energy Landscapes: Population Annealing and Parallel Tempering" [11]

- Odriozola, "Replica Exchange Monte Carlo Applied to Hard Spheres" [9]

1.3   Density of Sum of Two Squares

- Shiu "Counting Sums of Two Squares: The Meissel-Lehmer Method" [12]

1.4   Squares on the Torus

- Reztsov and Sloan, "On 2D Packings of Cubes in the Torus" – (The "Floor - Floor" result) [13]

- Decaudin and Neyret, "Packing Square Tiles into One Texture" (computer graphics "sum of squares" result) [14]

- Sikiric, Itoh, Poyarkov, "Torus Cube Packings" [15] – presentation, packing cubes on the torus (oriented)

1.5   Circles and Graphs on the Torus

- Dickinson, Guillot, Keaton, Xhumari "Optimal packings of up to five equal circles on a square flat torus" [16]

- Kocay, Neilson, Szypowski, "Drawing Graphs on the Torus" – Algorithm for constructing a straight line drawing with no crossing on a rectangular representation of the torus [17]

1.6   Square Packing – Experiment

- Zhao, Bruinsma, and Mason, "Entropic crystal-crystal transitions of Brownian squares" [18]

1.7   Square and Rectangle Packing - Theory

- Boucheron and Vega, "On a square packing Problem" – the asymptotic behavior of packings as n tends toward infinity [19]

- Sikicric and Itoh, "Combinatorial cube packings in the cube and the torus" – sequential random packing of cubes [20]

- Gensane and Ryckelynck, "Improved Dense Packings of Congruent Squares in a Square" – theory and 'billiard' algorithm [21]

- Wagon, "Fourteen Proofs of a Result About Tiling a Rectangle" [22] – tiling rectangles with rectangles

- Dutour, Itoh, Poyarkov, "Cube Packings, second moment, and holes" [23]

- Baumert et al., , "A combinatorial Packing Problem" [24] – The efficient packing of squares of side two in the p x p torus

- Duparcmeur, Gervois, and Troadec (1995) "Dense Periodic Packings of Regular Polygons [25]

- Chung and Graham, "Packing Equal Squares into a Large Square" [26] – theory / analytics – UNORIENTED version – method seems applicable to torus?

2 Overview: Square Packing on the Torus

2.1 Background

2.1.1 Square Packings in Squares

- Motivations: computer science

- NP-Completenness

- Analytical Work

- Related Numerical Work

2.1.2 Circle Packings on the Torus

- Analytical work

- Numerical work

2.1.3 Square Packings on the Torus

- Motivations

  - Compression

- Density of sum of squares

- NP-Completeness?

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