Wintersemester 2023/24

Dresdner Mathematisches Seminar

Prof. Dr. Manuel Friedrich

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The crystallization problem

The question whether for particle systems the ground states of a configurational energy arrange in a periodic lattice is referred to as the crystallization problem. In this talk, I present some known results for energies featuring two-body short-ranged particle interactions and three-body angular potentials. Afterwards, I discuss a new technique which allows to reduce the crystallization problem in the square lattice to a simple minimization related to the isoperimetric inequality in l1.

We also discuss the global geometry of ground states and the emergence of a macroscopic shape, the so-called Wulff shape, as the number of particles grows to infinity.

Mittwoch, 06.12.2023, 17:00 Uhr – Willers-Bau, Raum C 129

Leitung: Jun.-Prof. Dr. Markus Schmidtchen

Vor dem Vortrag findet **ab 16:30 Uhr** ein gemeinsames **Kaffee-/Teetrinken** vor Hörsaal **WIL C 307 (!)** statt.

Bereich Mathematik und Naturwissenschaften
Fakultät Mathematik