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Five-dimensional parallelehedra

In this talk I will report on the recent progress in the Voronoi conjecture on parallelehedra. The conjecture claims that every convex polytope that tiles \mathbb{R}^d with translations only is an affine image of the Dirichlet-Voronoi domain for some d -dimensional lattice. The Voronoi conjecture was stated more than a century ago but is still open in general case.

In the talk I plan to briefly survey some known results on the Voronoi conjecture and outline the proof of the conjecture in \mathbb{R}^5 .

Based on a joint work with Alexander Magazinov.