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Mathematik, Dolivostr. 15, 64293 Darmstadt, Germany. *Finiteness of the polyhedral  $\mathbb{Q}$ -codegree  
spectrum.*

The codegree of a lattice polytope  $P$  is the smallest integer  $k$  such that the  $k$ -th dilate of  $P$  has an interior lattice point. This is an important and widely studied number-theoretic invariant of a lattice polytope. The rational  $\mathbb{Q}$ -codegree can be seen as a polyhedral analogue more accessible to geometric methods. In this talk we explain the relevant notions and basic results. In particular, high  $\mathbb{Q}$ -codegree has strong structural implications on the lattice polytope.

Initially, the definition of the  $\mathbb{Q}$ -codegree was motivated by an algebraic invariant, the unnormalized spectral value, using the correspondence between lattice polytopes and polarized toric varieties. The spectrum conjecture of Fujita asks whether the set of values the unnormalized spectral value of a smooth polarized variety can assume above any positive threshold is finite. In the main part of the talk we show how the polyhedral methods introduced above can be used to settle this conjecture in the toric case.

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