

## Automorphisms of extremal lattices.

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This talk presents recent constructions and classifications of extremal even unimodular lattices whose dimension is a multiple of 24. We know six such lattices, the Leech lattice in dimension 24, four lattices of dimension 48 and, since 2010, also one extremal lattice in dimension 72. The existence of the latter was a longstanding open question. I will comment on its construction before turning to the enumeration of extremal even unimodular lattices of dimension 48 that are invariant under certain automorphisms. This investigation led to the discovery of a new extremal lattice, whose automorphism group is very small.