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Bounded lattice tiles that pack with another lattice

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(joint work with M.Kolountzakis and S.Grepstad)

Suppose L, M are full-rank lattices in Euclidean space, such that $vol(L) < vol(M)$. Answering a question of Han and Wang from 2001, we show how to construct a bounded measurable set F (we can even take F to be a finite union of polytopes) such that $F + L$ is a tiling and $F + M$ is a packing.