Institut für Diskrete Mathematik

Combinatorics Seminar

Friday 17th May 12:30

AE06, Steyrergasse 30

New Lower Bounds for Sphere Packing

Marcelo Campos

(University of Cambridge/IMPA)

In this talk I'll show the existence of a packing of identical spheres in $\mathbb{R}^d$ with density

$$(1 - o(1))\frac{d \log d}{2^{d+1}}\,,$$

as $d \to \infty$. This improves the best known asymptotic lower bounds for sphere packing density. The proof uses a connection with graph theory and a new result about independent sets in graphs which is proved probabilistically. This is joint work with Matthew Jenssen, Marcus Michelen and Julian Sahasrabudhe.

Joshua Erde, Mihyun Kang