Mathematics seminar

Tim de Laat
KU Leuven

Coarse embeddings of expanders into Banach spaces

Monday 28 September 2015, 11:15-12:00
IMADA seminar room

Abstract

Kazhdan's property (T) is an important property for groups that stands at the roots of many rigidity results. Key examples of groups with property (T) are the groups SL(n,Z) with n > 2, and more generally, higher rank lattices.

A major application of property (T) is the explicit construction of expanders, which are sequences of finite graphs with strong connectivity properties. It is an important open problem whether the expanders coming from higher rank lattices admit a coarse embedding into certain Banach spaces, i.e. an embedding that respects the large scale geometry. I will explain a joint work with Mikael de la Salle, in which we prove that given a Banach space satisfying certain conditions on its geometry, we can find a minimal rank such that all expanders constructed from lattices of at least this rank do not admit a coarse embedding into the given Banach space. The methods to prove this give rise to certain essentially different rigidity phenomena, which I will also comment on.

Host: Wojciech Szymanski