**MINICOURSE**

**Monday, April 16th** from 15:30 PM to 16:30 PM  
**Tuesday, April 17th** from 11:00 AM to 12:00 PM

*In Room AAC 006*

*To be followed by discussion*

**“Uniform non amenability and the first $l^2$ Betti number”**

**Stéphane Vassout**  
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*Target audience: doctoral students, researchers and Professors in Mathematic.*

**Abstract:**

I will present a recent work in collaboration with Mikael Pichot. First, I will review definitions, properties and examples of uniformly non amenable finitely generated discrete groups as defined by Osin and Arzhantseva, Burrillo, Lustig, Reeves, Short, Ventura and introduce uniform Cheeger isoperimetric constant. This definition can be extended to the case of finitely generated measured equivalence relations and it turns out that this uniform Cheeger constant is bounded below by the first $l^2$ Betti number in both cases of discrete groups and equivalence relations. In particular this gives a non trivial invariant for equivalence relations and allows to define a notion of ergodic uniform non amenability for finitely generated groups which is weaker than the usual one. This also has relations with the cost of an equivalence relation studied by Gaboriau and Levitt.