

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE  
UNIVERSITY OF SOUTHERN DENMARK, ODENSE

## Mathematics seminar

Juhani Koivisto  
Helsinki

### Amenability of metric measure spaces

Thursday 28 April 2016, 14:15-16:00  
IMADA seminar room

#### Abstract

A hyperbolic metric measure space with connected boundary satisfies a global Sobolev inequality, while Carnot groups satisfy a weighted global Sobolev inequality. From the point of view of coarse geometry, this reduces to the observation that the first space is non-amenable while the second is amenable. The weights are determined by controlled coarse homology encoding the isoperimetry of the space, and the connection to the measure arises through a local weak  $(1,1)$ -Poincaré inequality. This gives a characterisation of amenability for metric measure spaces supporting a local weak Poincaré inequality; which is the main result I present in this talk. I do not assume any familiarity with this topic; the aim is to make it familiar.

Host: David Kyed