Prof. Philippe Michel
Chair of Analytic Number Theory (TAN)

ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

SEMINAR OF MATHEMATICS

Tuesday February 28th, 2017 at 09h15, CIB lecture hall BI A0 448

Dr. Mark Hagen *(University of Cambridge)*

will present a seminar entitled:

"Generalised negative curvature and the geometry of groups"

Abstract:

Geometric group theory involves the study of groups as geometric objects, often via their (well-behaved) actions on (tractable) spaces, from which information about the group -- algebraic, geometric, algorithmic, etc. -- can be decocted. A major theme is that this method is particularly powerful when the spaces in question exhibit features of negative or nonpositive curvature. One of the most stunning examples is the theory of Gromov-hyperbolic groups. On the combinatorial side, so-called CAT(0) cube complexes recently proved their utility in resolving outstanding conjectures in 3-manifold topology (by Agol, Wise, and their collaborators), and are now ubiquitous objects in geometric group theory. Using cubical geometry as a starting point, I'll sketch the theory of "hierarchically hyperbolic groups", a common generalisation of hyperbolic groups, cubical groups, and mapping class groups of surfaces, which I have recently developed with J. Behrstock, M. Durham, and A. Sisto.

I'll illustrate the main goals and some future directions.

Lausanne, February 23, 2017 / mg