APRIL 1 - JULY 15

IMPAN, WARSAW

SIMONS SEMESTER ON

GEOMETRIC AND ANALYTIC GROUP THEORY

COLLOQUIUM
TUESDAY, 16.04.2019
16:15-17:30

ROOM 3180, MIMUW
BANACHA 2
02-097 WARSZAWA

Michael W. Davis (Ohio State University)

The action dimension of a discrete group G

Abstract: A space is called a $K(G,1)$ if its fundamental group is G and if its universal cover is contractible. The geometric dimension of G is the smallest dimension of a model for $K(G,1)$ by a cell complex. Its action dimension is the smallest dimension of a model for $K(G,1)$ by a manifold. In many examples there is natural model for $K(G,1)$ by a manifold and it can be shown that in these cases the action dimension equals the dimension of the natural model by manifold. The method for computing the action dimension involves a classical obstruction of van Kampen for embedding a cell complex into a Euclidean space of some dimension. I will discuss the Action Dimension Conjecture which relates the action dimension to two well-known conjectures in geometric group theory: the Singer Conjecture on the vanishing of L^2-Betti numbers of G when the model for $K(G,1)$ is a closed manifold and the Euler Characteristic Conjecture on the sign of the Euler characteristic in such a case.