Weakly-commensurable Zariski-dense subgroups and isospectral arithmetic compact locally symmetric spaces.

Prof. Gopal Prasad (Michigan & IAS)

Abstract

Andrei Rapinchuk and I have introduced a new notion of “weak-commensurability” of subgroups of two semi-simple groups. We have shown that the existence of weakly-commensurable Zariski-dense subgroups in semi-simple groups $G_1$ and $G_2$ leads to very strong relationship between $G_1$ and $G_2$. The key to understanding this is the existence of regular semi-simple elements in Zariski-dense subgroups with prescribed “local” behavior proved by us earlier. Our results on weakly-commensurable arithmetic groups provide a solution of the well-known problem “Can one hear the shape of a drum?” for arithmetic compact locally symmetric spaces. I will describe some of our results and outline the techniques used to prove them.

Wednesday, 11 April 2012
4:00 pm
Smith Hall 204
Tea and refreshments will be served at 3:45pm.

http://math.newark.rutgers.edu/~xiaowwan/Colloquium/