PROPER ACTIONS OF 3-MANIFOLD GROUPS ON FINITE PRODUCT OF QUASI-TREES

Online seminar

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Abstract: Let M be a compact, connected, orientable 3-manifold. In this talk, I will study when the fundamental group of M acts properly on a finite product of quasi-trees. Our main result is that this is so exactly when M does not contain Sol and Nil geometries. In addition, if there is no SL(2, R) geometry either, then the orbital map is a quasi-isometric embedding of π_1(M). This is called property (QT) by Bestvina-Bromberg-Fujiwara, who established it for residually finite hyperbolic groups and mapping class groups. The main step of our proof is to show property (QT) for the classes of Croke-Kleiner admissible groups and of relatively hyperbolic groups under natural assumptions. Accordingly, this yields that graph 3-manifold and mixed 3-manifold groups have property (QT). This represents joint work with N.T. Nguyen and S.Z. Han.