1000-20-74 **Krishnan Shankar*** (shankar@math.ou.edu), 601 Elm Ave., PHSC 423, Department of Mathematics, University of Oklahoma, Norman, OK 73019. *CAT(0) cube complexes for non-discrete reflection groups.* Preliminary report.

Let G be a group generated by reflections in the sides of a polygon in the Euclidean plane $\mathbf{R}^2$ or in the hyperbolic plane $\mathbf{H}^2$. If G acts discretely, then the *Sageev construction* yields a CAT(0) cube complex with a G-action. The Sageev construction is a natural generalization of groups acting on trees (which are 1-dimensional cube complexes); actions on trees along with Bass–Serre theory yields splitting information for groups.

In this work in progress we generalize Sageev's construction to non-discrete reflection groups in the plane $\mathbf{R}^2$. The goal is to understand whether this construction works or fails in the hyperbolic setting, in particular for co-compact, irreducible lattices in $\mathbf{H}^2 \times \mathbf{H}^2$. This is joint work with Noel Brady and Max Forester. (Received August 15, 2004)