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Regular Isometries of $CAT(0)$ Cube Complexes are Plentiful

A rank-1 isometry of an irreducible $CAT(0)$ space is an isometry that exhibits hyperbolic-type behavior regardless of whether the ambient space is indeed hyperbolic. A regular isometry of an (essential) $CAT(0)$ cube complex is an isometry that is rank-1 in each irreducible factor. In a joint work with Lecureux and Matheus, we study random walks and deduce that regular isometries are plentiful, provided the action is nonelementary. This generalizes previous results of Caprace-Sageev and Caprace-Zadnik (where it is assumed that the acting group has lattice-type properties).