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Emily Stark* (stark@math.utah.edu) and **Daniel J. Woodhouse**. *Action rigidity for free products of hyperbolic manifold groups.*

The relationship between the large-scale geometry of a group and its algebraic structure can be studied via three notions: a group's quasi-isometry class, a group's abstract commensurability class, and geometric actions on proper geodesic metric spaces. A common model geometry for groups G and G' is a proper geodesic metric space on which G and G' act geometrically. A group G is action rigid if every group G' that has a common model geometry with G is abstractly commensurable to G . For example, a closed hyperbolic n -manifold group is not action rigid for all n at least three. In contrast, we show that free products of closed hyperbolic manifold groups are action rigid. Consequently, we obtain the first examples of Gromov hyperbolic groups that are quasi-isometric but do not virtually have a common model geometry. This is joint work with Daniel Woodhouse. (Received January 27, 2020)