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Ian P Biringer*, 84 Nash St, New Haven, CT 06511, and **Juan Souto**. *Geometric consequences of algebraic rank in hyperbolic 3-manifolds.*

Mostow's rigidity theorem states that a closed hyperbolic 3-manifold M is determined up to isometry by the algebra of its fundamental group. We will discuss how the geometry of M is constrained by the minimal number of elements needed to generate its fundamental group; this invariant is called the (algebraic) rank of M . In particular, we will explain how M can be decomposed into a number of geometric building blocks such that the complexities of the blocks and of the decomposition depend only on M 's algebraic rank and on a lower bound for M 's injectivity radius.

Joint with Juan Souto. (Received February 11, 2011)