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Finiteness of geodesic submanifolds of hyperbolic manifolds.

Hyperbolic manifolds, $n \geq 3$, that are arithmetic were characterized by Borel and Margulis as being infinite index in their commensurator. One can use this to show that an arithmetic hyperbolic n -manifold either contains no totally geodesic hypersurfaces or they are everywhere dense. Reid and McMullen (for $n = 3$) asked whether having infinitely many totally geodesic hypersurfaces conversely implies arithmeticity. I will discuss work with Bader, Fisher, and Miller that answers this question in the positive. (Received August 28, 2019)