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**David Futer\*** (dfuter@temple.edu) and **Christian Millichap**. *Geometrically similar knots*. Preliminary report.

This talk is motivated by the following question: how well do geometric invariants (such as hyperbolic volume and the length of geodesics) distinguish knot complements, or more general 3-manifolds?

There are several known ways to produce hyperbolic 3-manifolds that isospectral (i.e. have exactly the same spectrum of geodesic lengths) but not isometric. All known constructions of of this sort involve finite covers of the same base manifold, leading Reid to ask whether this is a necessary feature. That is, are isospectral manifolds necessarily commensurable? I will describe a way to build pairs of knot complements that are incommensurable but have the same closed geodesics up to length  $L$ , where  $L$  is as large as one likes. (Received August 11, 2015)