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Jason Alan Behrstock* (jason@math.columbia.edu), Department of Mathematics, 155 South 1400 East, Salt Lake City, UT 84112. *Thick metric spaces, relative hyperbolicity, and quasi-isometric rigidity.*

In this talk we will introduce a new quasi-isometry invariant of metric spaces which we call *thick*. We show that any thick metric space is not (strongly) relatively hyperbolic with respect to any non-trivial collection of subsets. Further, we show that the property of being (strongly) relatively hyperbolic with thick peripheral subgroups is a quasi-isometry invariant. The class of thick groups includes many important examples such as mapping class groups of all surfaces (except those few that are virtually free), the outer automorphism group of the free group on at least 3 generators, $SL_n(\mathbb{Z})$ with $n \geq 3$, and others. We shall also discuss some ways in which thick groups behave rigidly under quasi-isometries. The results in this talk are joint work with C. Druţu and L. Mosher. (Received August 10, 2005)