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John Lott*, University of Michigan, Ann Arbor, MI. *Curvature of metric spaces.*

For various reasons, geometers like to extend notions of curvature from the setting of Riemannian manifolds to the setting of metric spaces. In the case of sectional curvature, Alexandrov gave a good notion of what it means for a metric space to have "sectional curvature bounded below". It has been an open question whether there is a good notion of a metric space having "Ricci curvature bounded below". I will describe work with Cedric Villani that provides such a notion, using methods from a branch of applied math called optimal transport. (Related results were obtained independently by K.-T. Sturm.) I will also give some geometric and analytic applications. (Received January 12, 2007)