

Kempner Colloquium

# CURVATURE FOR METRIC SPACES

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We can talk about whether a Riemannian manifold is positively curved, in the sense of having positive sectional curvatures. A related notion is that of positive Ricci curvature. Do these notions make sense for metric spaces? On the face of it the answer is no, but with some mild extra conditions it turns out that the answer is yes. For sectional curvature, this was done by the Soviet mathematician Alexandrov. The case of Ricci curvature was answered in work of the speaker with Cedric Villani, and in independent work by Karl-Theodor Sturm. I will survey these developments and explain what Ricci curvature has to do with moving dirt around. Little prior knowledge of differential geometry will be assumed.

Thursday October 6, 2011

2:00 p.m.

MATH 350