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Leonid V. Kovalev, Texas A&M University, College Station, TX, and **Jeremy T. Tyson***
(tyson@math.uiuc.edu), Department of Mathematics, University of Illinois, 1409 West Green
Street, Urbana, IL 61801. *Metric geometry of hyperspaces.*

The compacta hyperspace of a metric space X is the space $H_0(X)$ of all compact subsets of X equipped with the Hausdorff metric. More generally, any collection of closed subsets of X on which the Hausdorff metric is finite is known as a hyperspace of X . A pervasive theme in fractal geometry is the study of fractal sets in X as elements of $H_0(X)$. In this talk, I will discuss the intrinsic metric structure of hyperspaces. Some relevant topics include: Gromov hyperbolicity and CAT(0) geometry of hyperspaces, quasisymmetric and bi-Lipschitz maps between hyperspaces, and bi-Lipschitz embeddings to and from hyperspaces. Bi-Lipschitz and/or quasisymmetric recognition of hyperspaces remains a challenging open problem. Part of this talk is based on joint work with Leonid Kovalev. (Received March 01, 2006)