

Meeting: 1001, Evanston, Illinois, SS 12A, Special Session on Iterated Function Systems and Analysis on Fractals

1001-37-77 **Yunping Jiang*** (yunqc@forbin.qc.edu), Dept of Math, Queens College of CUNY, Flushing, NY 11367. *Asymptotical Geometry of Cantor Systems.*

We define an asymptotically non-hyperbolic family of folding maps. Such a family arises in dynamical systems as hyperbolicity is created. We study the geometry of the family of Cantor systems associated with an asymptotically non-hyperbolic family. We prove that the bridge geometry of a Cantor system in such a family is uniformly bounded and that the gap geometry is regulated by the size of the leading gap. The study of geometry provides many other properties of Cantor systems. For example, we will also mention a recent result we obtained in a joint work with Fan and Wu on Hausdorff dimension. We show that the Hausdorff dimension of the maximal invariant set of a map in an asymptotically non-hyperbolic family is regulated by the size of the leading gap.

References:

1. Y. Jiang, Geometry of Cantor systems. Trans. Amer. Math. Soc., Vol 351 (1999), no. 5, 1975-1987.
2. A. Fan, Y. Jiang, and J. Wu, Asymptotic Hausdorff dimensions of Cantor sets associated with an asymptotically non-hyperbolic family. Preprint. (Received August 10, 2004)