

**Meeting:** 1003, Atlanta, Georgia, SS 33A, AMS Special Session on Topics in Geometric Function Theory, I

1003-54-857      **Jeremy T. Tyson\*** ([tyson@math.uiuc.edu](mailto:tyson@math.uiuc.edu)), Department of Mathematics, University of Illinois, 1409 West Green St., Urbana, IL 61801. *Bi-Lipschitz and quasisymmetric embeddings of hyperspaces.*

The subject of this talk is the bi-Lipschitz and quasisymmetric geometry of metric compacta hyperspaces. The (compacta) hyperspace of a compact metric space  $(X, d)$  is the collection  $K(X)$  of all closed subsets of  $X$  equipped with the Hausdorff metric.

We will discuss two theorems. Theorem A provides sufficient conditions for the existence of a bi-Lipschitz embedding of  $K(X)$  in a finite-dimensional Euclidean space. It is a quantized version of a classical theorem of Pełczyński. The quasisymmetric characterization problem for such hyperspaces will also be discussed.

Theorem B asserts that the hyperspace of  $[0, 1]$  admits no bi-Lipschitz embedding into any  $L^p$  space with  $1 < p \leq 2$ . By way of contrast, a celebrated theorem of Schori and West asserts that  $K([0, 1])$  is topologically equivalent with the Hilbert cube. The proof of Theorem B relies on recent results of Lee, Mendel and Naor concerning the metric geometry and  $L^p$  embeddability of series-parallel graphs. (Received September 30, 2004)