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Jeffrey Schlaerth* (jschlaer@math.kent.edu), The Department of Mathematical Sciences, Kent State University, Kent, OH 44242. *Local and Equatorial characterization of unit balls of subspaces of L_p , $p > 0$ and properties of the generalized cosine transform.*

In this talk we show that there is no local equatorial characterization of bodies that embed in L_p in *odd* dimensions for all p not even, $0 < p < \infty$. However, bodies that embed in L_p for p odd are local equatorially characterizable provided that the dimension is even but not locally characterizable in general. This extends results given by Panina; Goodey and Wiel; Nazarov, Ryabogin and Zvavitch concerning the local equatorial characterization of zonoids and intersection bodies. (Received September 16, 2008)