The metric geometry of unordered layers of the Hamming cube and applications

Florent Baudier (Texas A&M University — USA)

In this talk the Lipschitz geometry of layers of an unordered stratification of the infinite Hamming cube is discussed. Tight estimates on the distortion necessary to embed the layers into spaces of continuous functions on countable compact metric spaces are given. As an application the first nontrivial lower bounds on the $C(K)$-distortion of important classes of separable Banach spaces, for K a countable compact in the family $\{[0,\omega],[0,\omega\cdot 2],\cdots,[0,\omega^2],\cdots,[0,\omega^k\cdot n],\cdots,[0,\omega^\omega]\}$, are obtained.

Joint work with D. Freeman, Th. Schlumprecht, and A. Zsák.