

1096-46-1588

**Florent P. Baudier\*** (florent@math.tamu.edu), College Station, TX. *Geometry of layers of cubes: applications in geometric group theory and nonlinear geometry of Banach spaces.*

One can equip the set of all finite subsets of the integers with the symmetric difference metric, i.e. the distance between two finite subsets is the cardinality of their symmetric difference. This metric space, which is isometric to the infinite Hamming cube, and its relatives turn out to be related to important geometric properties of Banach spaces. In this talk, we will give two utilizations of those metrics. The first application is related to fundamental questions in geometric group theory. We will show how a tight estimate on the Lebesgue compression (introduced by Guentner and Kaminker) of  $\ell_p$ -spaces can be derived from a beautiful stabilization result of Kalton and Randrianarivony. The second application occurs in nonlinear geometry of Banach spaces. Given a compact metric space  $K$  one shall establish a link between the Cantor-Bendixson index of  $K$  and the  $\mathcal{C}(K)$ -distortion of the set of subsets of the integers with at most  $k$  elements equipped with the symmetric difference metric, denoted  $\Delta_{\leq k}$ . Estimates on the  $\mathcal{C}(K)$ -distortion of the spaces  $\Delta_{\leq k}$  will be given as well.

The work presented covers joint work with F. Albiac and joint work with D. Freeman, T. Schlumprecht and A. Zsak. (Received September 16, 2013)