Speaker: Stanisław Szarek (Case Western Reserve U. & U. Pierre et Marie Curie)

Title: Asymmetry of convex sets and rough approximation by polytopes

Abstract: The primary result we report on is as follows:
If $K \subset \mathbf{R}^n$ is a convex body and $\delta \in (0, \frac{1}{2})$, then there exists a polytope $Q \supset K$ with $N \leq n \exp(C\delta n)$ faces such that $\delta(Q - a) \subset (K - a)$, where a is the centroid of Q.
This implies bounds for the metric entropy of Banach-Mazur compacta on coarse scales and complements recent results of Barvinok, Litvak/Rudelson/Tomczak-Jaegermann and Pisier. Speaker's original interest in this circle of questions stemmed from an 2000 inquiry of Olek Pełczynski around the turn of the millennium.