Ramón J. ALIAGA, Universidad Politécnica de Valencia

"Extreme points of the unit ball of Lipschitz-free spaces"

The problem of identifying all extreme points of the unit ball of the Lipschitz-free space $\mathcal{F}(M)$, for an arbitrary complete metric space M, is still open. The main question is whether all extreme points are necessarily elementary molecules. This is known to be true under various additional conditions on M and on the extreme points.

We will review the current knowledge on the topic, and show how the theory of optimal de Leeuw representations can be used to obtain results on the extremal structure of $B_{\mathcal{F}(M)}$ in an elegant and simple way. We will sketch the proof that all extreme points are molecules when M is compact, and when M is uniformly discrete; the latter is a new result. We will also discuss a result on the structure of faces of $B_{\mathcal{F}(M)}$ that yields a simplified proof of the well-known characterization of extreme molecules.

This talk is based on joint work with Eva Pernecká (Czech Technical University in Prague) and Richard J. Smith (University College Dublin).

———————————