

# Boundedly Polyhedral Sets and $F$ -Simplices

*Valeriu Soltan*, George Mason University, Fairfax, VA – 22030

## Abstract

Generalizing the concept of *Choquet simplex*, we study a new class of  $n$ -dimensional convex sets  $K$  in  $\mathbb{R}^n$  which satisfy the following condition: all  $n$ -dimensional intersections of the form  $K \cap (x + K)$ ,  $x \in \mathbb{R}^n$ , belong to at most finitely many homothety classes of convex sets. Our description of this class uses new results on boundedly polyhedral sets. We recall that a convex set  $K$  is *boundedly polyhedral* if its intersection with any polytope is again a polytope.

**Keywords:** convex set, Choquet simplex, homothety class, polytope.