SIMION STOILOW INSTITUTE OF MATHEMATICS OF THE ROMANIAN ACADEMY

IMAR Monthly Lecture

On $\mathcal{F}$-convexity and related problems

Liping Yuan

School of Mathematical Sciences, Hebei Normal University, P. R. China

Wednesday, March 19, 2025, 12:00
IMAR, *Miron Nicolescu* Amphitheater

Abstract: Let $\mathcal{F}$ be a family of sets in $\mathbb{R}^d$. A set $M \subset \mathbb{R}^d$ is called $\mathcal{F}$-*convex* if for any pair of distinct points $x,\ y \in M$, there is a set $F \in \mathcal{F}$ such that $x,\ y \in F$ and $F \subset M$. In this talk we'll discuss $\mathcal{F}$-convexity and related problems for some interesting families $\mathcal{F}$, including characterizations of $\mathcal{F}$-convex sets, $\mathcal{F}$-convex completions, generic $\mathcal{F}$-convexity, $\mathcal{F}$-convex functions, and $\mathcal{F}$-convexity in graphs.

Based on joint work with Professor Tudor Zamfirescu and students in my group.