

Median graphs, algebras and complexes

Boštjan Brešar and Tanja Golobranec

Abstract: In this talk we will present a strong connection between certain ternary algebras, called median algebras, that enjoy three simple axioms, and the class of median graphs. Median graphs are the most important class in metric graph theory, and appear in several applications in computer science, mathematical biology and elsewhere. Median graphs are also closely related to certain $CAT(0)$ cubical complexes. We will select a small portion of numerous characterizations and properties of median graphs. Finally we will present a natural generalization of median graphs, the so-called tree-like partial cubes.