

Jaroslav Nešetřil (Department of Applied Mathematics and Institute of Theoretical Computer Science, Charles University, Prague, The Czech Republic)
From sparse to nowhere dense structures: dualities and first order properties

Abstract: Asymptotic properties of graphs (and more generally of finite relational structures) are expressed by colorings, separation and structural decompositions. On the other side the obstacles to decompositions lead to first order properties (and homomorphism preservation) and, in the extremal case, to dualities for special classes (bounded local expansion and nowhere dense graphs). The rich interplay of these notions will be surveyed.