

**Artem Chernikov: Graph regularity and incidence phenomena in distal structures.**

In recent papers by Alon et al. and Fox et al. it is demonstrated that families of graphs with a semialgebraic edge relation of bounded complexity have strong regularity properties and can be decomposed into very homogeneous semialgebraic pieces up to a small error (typical example is the incidence relation between points and lines on a real plane, or higher dimensional analogues). We show that in fact the theory can be developed for families of graphs definable in a structure satisfying a certain model theoretic property called distality, with respect to a large class of measures (this applies in particular to graphs definable in arbitrary o-minimal theories and in p-adics).

(Joint work with Sergei Starchenko.)