Title: Ramsey-Type Theorems in Certain NIP Theories

Abstract:
In the paper “Crossing Patterns of Semi-algebraic Sets”, (2005), N. Alon, J. Pach, R. Pinchasi, R. Radoicic, and M. Sharir proved the following theorem.

Let $R(x, y)$ be a semi-algebraic relation. Then there is a constant $e > 0$ such that for any finite sets $A, B$ there finite subsets $A', B'$ with $|A'| > e|A|, |B'| > e|B|$ and either $R(a, b)$ holds for all $a \in A', b \in B'$ or $R(a, b)$ fails for all $a \in A', b \in B'$.

In this talk we discuss a generalization of this theorem to certain NIP theories.

This is a joint work with A. Chernikov.