Title: Erdős-Hajnal property for dp-minimal graphs

Abstract: A family of graphs $\mathcal{F}$ is said to have *Erdős-Hajnal property* if there is $\tau > 0$ such that for any graph $G \in \mathcal{F}$, there exists an induced subgraph $H \subseteq G$ of size $\geq |G|^\tau$ such that H is a clique (i.e. a graph where every two vertices are adjacent) or H is an anticlique (i.e. a graph where every two vertices are non-adjacent). We show that for each integer $d \geq 2$, the family $\mathcal{F}_d = \{G = (V, E) : G$ and $\overline{G}$ have no d-tuple $(a_1, ..., a_d)$ satisfying that there exists $\{b_{ij}\}_{i \neq j, i,j \in \{1,...,d\}}$ such that for all $i, j \in \{1, ..., d\}$, $E(b_{ij}, a_i) \wedge E(b_{ij}, a_j) \wedge \bigwedge_{k \neq i,j} \neg E(b_{ij}, a_k)\}$ has Erdős-Hajnal property. In particular, if T is a dp-minimal theory, E a definable symmetric binary relation and $\mathcal{M} \models T$ then the family $\{G = (V, E) : V \subseteq M$ a finite set and for every two vertices $x, y \in V$, $E(x, y)$ iff $\mathcal{M} \models E(x, y)\}$ has Erdős-Hajnal property .