Large cliques or stable sets in graphs with no P_4 and no P_5^c

Date Tuesday, April 21

Time 5:30 pm

Location 507 Math

Abstract: Erdos and Hajnal conjectured that, for any graph H, every graph on n vertices that does not have H as an induced subgraph contains a clique or a stable set of size $n^e(H)$ for some $e(H) > 0$. The conjecture is known to be true for graphs H on at most four vertices. One of the two remaining open cases on five vertices is the case where H is a four-edge path, the other case being a cycle of length five. In this paper we prove that every graph on n vertices that does not contain a four-edge-path or the complement of a five-edge-path as an induced subgraph contains either a clique or a stable set of size at least $n^{1/8}$. This is joint work with Maria Chudnovsky.