Title of the talk: **Independent Locating-Dominating Sets in Graphs: Existence and some bounds.**

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Abstract:

Given a connected graph $G = (V, E)$, a set $D \subseteq V$ is a *dominating set* if every vertex not in D is adjacent to a vertex in D. A set $D \subseteq V$ is an *independent set* is no two vertices in D are adjacent. An independent dominating set of G is a set that is both independent and dominating. Likewise, an independent dominating set is a maximal independent set. A dominating set S of G is called locating-dominating if for every pair $u, v \notin S$, $N(u) \cap S \neq N(v) \cap S$.

A set $D \subseteq V$ is an *independent locating-dominating set*, an *ILD-set* for short, if it is both independent and locating-dominating. Notice that not every graph contains ILD-sets, being the complete graph family the simplest example. An ILD-graph is a graph containing ILD-sets. The independent locating-dominating number of an ILD-graph G, denoted by $i_\ell(G)$, is the minimum cardinality of an ILD-set of G.

In this talk, we approach both the problem of determining which graph families are ILD-graphs and also some strategies to bound and/or to compute the independent locating-dominating number for a number of specific ILD-graph classes.