# ISOLATION OF GRAPHS

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Given a set $\mathcal{F}$ of graphs, we call a copy of a graph in $\mathcal{F}$ an $\mathcal{F}$-graph. The *$\mathcal{F}$-isolation number* of a graph $G$, denoted by $\iota(G, \mathcal{F})$, is the size of a smallest subset $D$ of the vertex set of $G$ such that the closed neighbourhood $N[D]$ of $D$ intersects the vertex sets of the $\mathcal{F}$-graphs contained by $G$ (equivalently, $G - N[D]$ contains no $\mathcal{F}$-graph). When $\mathcal{F}$ consists of a 1-clique, $\iota(G, \mathcal{F})$ is the *domination number* of $G$. When $\mathcal{F}$ consists of a 2-clique, $\iota(G, \mathcal{F})$ is the *vertex-edge domination number* of $G$. The study of the general $\mathcal{F}$-isolation problem was introduced by Caro and Hansberg [4] in 2017. This study is expanding very rapidly. A brief account of its development and of the speaker's recent work in this field [1, 2, 3] will be provided.

## References

[1] P. Borg, *Isolation of regular graphs, stars and $k$-chromatic graphs*, arXiv:2303.13709 [math.CO].

[2] P. Borg, *Isolation of regular graphs and $k$-chromatic graphs*, Mediterranean Journal of Mathematics 21 (2024), paper 148.

[3] P. Borg, *Proof of a conjecture on isolation of graphs dominated by a vertex*, Discrete Applied Mathematics 371 (2025), 247–253.

[4] Y. Caro, A. Hansberg, *Partial domination - the isolation number of a graph*, Filomat 31(12) (2017), 3925–3944.