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*A Tale of the Tree-Independence Number*

Treewidth is a graph parameter commonly used to quantify how "close" a graph is to a tree. Although it is a cornerstone of structural graph theory and algorithm design, it is nearly useless for algorithmic purposes in many dense graph classes. In this talk, we discuss the tree-independence number, a more versatile graph parameter that replaces the standard width measure with the stability number. We will present recent results aimed at characterizing the graph classes in which this parameter enables sub-exponential time algorithms for problems that are, in general, NP-hard.