TRENT MARBACH, Toronto Metropolitan University

From Localizing Designs to Designing Detecting Hypernetworks

Designs have been found to provide important extremal examples for pursuit-evasion graph parameters. We begin by describing our work in using designs to analyze the localization graph parameter, which is a parameter that asks for the number of distant-detecting agents that are required to locate a moving target on a graph. This work led into looking at related graphs, and we will show how studying the problem of detecting multiple signals within hypergraphs was used in this endeavour. This detectability problem is interesting in its own right and we will show an application we found of this theory, which in a pleasing turn of event has its optimal objects being well-known designs.