

Małgorzata Sulkowska

Wrocław University of Science and Technology

COMMUNITY DETECTION VIA STAR MODULARITY

Modularity is a graph parameter introduced by Newman and Girvan in 2004. It measures the presence of community structure in graphs and is widely used in clustering applications. However, it exhibits several limitations, particularly the so-called resolution limit. This means that small communities are merged into larger ones since modularity is unable to detect structures below a certain scale. To address this issue, we introduce star modularity, a modification of the classical parameter. We analyze how star modularity behaves on sparse graphs in comparison with the traditional metric.

This is joint work with Lena Jasińska, Mikołaj Krupiński, and Zofia Kuriata.