

Evaluer la qualité d'une fragmentation de graphe multi-niveaux

Carole Blanc*, Maylis Delest*†, Jean-Marc Fédou‡,
Guy Melançon*†, François Queyroi*

* Université de Bordeaux, CNRS, LaBRI
{blanc,maylis,melancon,queyroi}@labri.fr

† INRIA Bordeaux – Sud-Ouest, France

‡ Université de Nice, CNRS UMR 6070 I3S, France
fedou@unice.fr

Abstract

We design and study a multilevel modularity quality for clustered graphs, explicitly taking the nesting structure of clusters into account. Multilevel models appear crucial in the natural and social sciences. The multilevel modularity quality measure generalizes a modularity quality measure introduced by Mancoridis in the context of reverse software engineering. The measure we designed recursively traverses the hierarchy of clusters and computes a one-variable polynomial encoding the intra and inter-cluster connectivity ratios appearing at all levels in a hierarchical clustering. The resulting polynomial reflects how the graph combines with the hierarchy of clusters and can be used to assess the quality of a hierarchical clustering. We discuss archetypal examples as proof-of-concept.

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