

Sparsity – an Algorithmic Perspective

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Abstract

It is a well known experience that for sparse structures one can find fast algorithm for some problems which seem to be otherwise complex. The recently developed theory of sparse classes of graphs (and structures) formalizes this. Particularly the dichotomy Nowhere vs Somewhere Dense presents a very robust tool to study and design algorithms and algorithmic metatheorems. This dichotomy can be characterized in many different ways leading to broad applications. We survey some of the recent highlights. This is a joint work with Patrice Ossona de Mendez (EHESS Paris and Charles University Prague).

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