

On edge deletion problems to immersion-closed graph classes

Jean-Florent Raymond

Wednesday, 8th of March, 2017, 1:00 p.m., room TEL 716

Abstract

Suppose F is a finite family of graphs. We consider the following problem, called F -Immersion Deletion: given a graph G and integer k , decide whether the deletion of at most k edges of G can result in a graph that does not contain any graph from F as an immersion. This problem is a close relative of the F -Minor Deletion problem studied by Fomin et al. [FOCS 2012], where one deletes vertices in order to remove all minor models of graphs from F .

We prove that whenever all graphs from F are connected and at least one graph of F is planar and subcubic, then the F -Immersion Deletion problem admits a constant factor approximation and a linear kernel. These results mirror those obtained by Fomin et al. on the F -Minor Deletion problem, with some notable differences, though.

This is joint work with Archontia C. Giannopoulou, Michał Pilipczuk, Dimitrios M. Thilikos, and Marcin Wrochna. A preprint can be found at <http://arxiv.org/abs/1609.07780>.