

Title: Machine-based methods in parameterized complexity theory

Authors: Yijia Chen, Jörg Flum, and Martin Grohe

Abstract: We give machine characterizations of most parameterized complexity classes, in particular, of $W[P]$, of the classes of the W -hierarchy, and of the A -hierarchy. For example, we characterize $W[P]$ as the class of all parameterized problems decidable by a nondeterministic fixed-parameter tractable algorithm whose use of nondeterminism is bounded in terms of the parameter. The machine characterizations suggest the introduction of a hierarchy W^{func} between the W and the A -hierarchy. We study the basic properties of this hierarchy.

Last modified: Tue Oct 7 22:45:04 CEST 2003
Martin Grohe