

Algebraic reduction of CSP to digraphs

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It is well known that every fixed template CSP can be reduced to CSP over a directed graph. We provide a simplification of such reduction and investigate its algebraic properties. While it is known that digraph CSPs cannot exhibit the full range of polymorphism properties found over arbitrary CSPs, we show that the discrepancy is small: the majority of interesting equational properties carry across to digraphs. As a consequence, many open problems arising in the algebraic study of CSPs are equivalent to corresponding problems restricted to the class of digraphs. This talk is based on joint work with D. Delić, M. Jackson and T. Niven.

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