
Common misbeliefs when working with total unimodularity

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Abstract

Totally unimodular (TU) matrices constitute the most important matrix class in discrete optimization. Besides the mere presence in polyhedral combinatorics, TU matrices were recently exploited for algorithmic advances in several research areas.

In the talk I will discuss common pitfalls when working with them. A first is about the TU-preserving *pivoting* operation, a second about *network matrices* which is the most important subclass, and a third one is about the *3-sum* operation.

Finally, I will report on current efforts to make relevant functionality available in the SageMath computer algebra system, which is joint work with Luze Xu and Matthias Koeppe.

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