

Chubanov, Sergei

A strongly polynomial algorithm for linear systems having a binary solution. (English)

Zbl 1268.90029

Math. Program. 134, No. 2 (A), 533-570 (2012).

The paper describes a strongly polynomial algorithm which either finds a solution to a linear system with integer coefficients, or correctly decides that the system does not have 0,1-solutions. The algorithm can be used as a basis for the construction of a polynomial algorithm for linear programming, which differs substantially from the well-known polynomial algorithms. The most important properties on which the method is based are the (Hahn-Banach) separation theorem for disjoint convex sets and the Cauchy-Schwarz inequality.

Reviewer: Maxim Ivanov Todorov (San Andres Cholula)

MSC:

90C05 Linear programming
90C09 Boolean programming

Cited in **3** Reviews
Cited in **16** Documents

Keywords:

linear programming; polynomial algorithm; integer solutions

Full Text: [DOI](#)

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