

Lecture 2.

Effective Methods for MISP

The second lecture will be devoted to effective methods for solving MIPs, such as approximate and (meta)heuristic algorithms. Polynomial schemes are the most popular methods among approximate algorithms. However, theoretical estimations are often far from global optima. So, fast heuristic and metaheuristic algorithms become increasingly popular nowadays. VNS seems the most successful in this direction. That's why significant part of the lecture will be devoted to this method. As a rule, the quality of heuristic solutions is determined by strong lower bound and computation time. However, the upper bound is also of interest and can serve as an additional criterion for fast algorithms. In this regard, effective algorithms for strong upper bound are also relevant. These algorithms often use the chromatic number of the graph and will be also discussed in frame of lecture.