

ON THE BICRITERIA SET PARTITIONING PROBLEM

Bezhan Ghvaberidze

Iv. Javakhishvili Tbilisi State University, Department of Computer Sciences, Tbilisi, Georgia,
b.gvaberidze@gmail.com

Set partitioning problem (SPP) belongs to the widely spread class of discrete optimization and is well known for number of applications. In particular, we can note one of the methods of solving vehicle routing problems (VRP) by solving minimum partitioning problem. In reality, most of decision making problems are multicriteria by nature, the optimal solution is evaluated by several criteria. Multicriteria optimization problems are harder to solve compared to scalar optimization problems and requires specific methods and approaches.

We present the task of solving bicriteria set partitioning problem using ε -constraint method. The algorithm is constructed which allows us to find Pareto optimal (efficient) solutions. For solving partitioning problem, the modified version of D.Knuth's Dancing Links algorithm is used.