Public-private partnership model with tax benefits

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In [1,2], a new approach was proposed for design the program of development of the mineral resource base by using the mechanism of public-private partnership. The private investor was going to implement some investment projects that require preliminary infrastructure work and take into consideration environmental losses (pollution of rivers, lakes, etc.). The state took on infrastructure and part of ecological problems. The mechanism of public-private partnership is based on the "leader-follower" Stackelberg game and bilevel Boolean programming model, where the leader is the state.

In this paper we consider the possibility of tax benefits for any investment project by the state. We show results that characterize the computational and the approximational complexity of the problem. We design a hybrid algorithm based on local search and CPLEX software. Numerical experiments are conducted on special polygon of test instances based on the mineral resources of the Transbaikal territory.

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References

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