



Contribution ID: 130

Type: not specified

Application of methods of machine learning and data mining to problems of institutional economics

Thursday, July 6, 2017 2:15 PM (15 minutes)

Methods of machine learning and data mining are widely used now in many tasks of physics, chemistry, biology, medicine and in some other areas. Such techniques allow to obtain reliable results in poorly formalized areas. The last several years we used these methods for search of regularities in panel data of the statistical indicators, characterizing the institutional economy of different countries of the world. Consideration of influence of institutional characteristics of the countries connected with features of the legislation (for example, the property rights), traditions, habits of citizens of the concrete countries on indicators of economic development is important for borrowing of their experience, including, economic. Our analysis is based on variety of machine learning tools including some original techniques. For verification of the identified regularities the methods based on permutation tests, which do not demand aprioristic assumptions of the nature of probabilistic distributions, and allowing correct application at the small data set. Panel data researches usually are associated with analysis of a large number of the factors, characterizing relative dynamics of economic indicators. So they demand adequate accounting of multiple testing problem.

This work was supported by RFBR (grant №17-02-00207)

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Session Classification: Distributed and parallel computing and tools for scientific computing (II)