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Title: Obtención automática de modelos de ecuaciones simultáneas

Abstract:

The problem of how to obtain a Simultaneous Equation Model (SEM) from a set of variables is studied. The idea is to develop an algorithm which, given the endogenous and exogenous variables, approaches the best SEM possible according to certain criteria for model comparison. The space of the possible solutions is very large since the number of equations of the best model is between one and the total number of endogenous variables. Because of that exhaustive search methods are not very suitable and metaheuristic techniques are applied instead. This work analyses the solution of the problem via genetic algorithms. The solution is not necessarily the best, but the cost of finding it is much lower than the cost of finding the best one when using exhaustive search methods. A basic version of a genetic algorithm is presented first. After that, a greedy method is used to improve the algorithm, so obtaining a hybrid metaheuristic. The idea is to use the greedy method in some parts of the genetic algorithm to explore the solutions space better.

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