数学与系统科学研究院

计算数学所学术报告

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报告题目：

A Subspace Coordinated Search Algorithm for Global Optimization

邀请人： 优化与应用研究中心

报告时间：**2019 年 5 月 20 日（周一）**

上午 10:30-11:30

报告地点： 科技综合楼三层

311 报告厅

Abstract：

We propose a subspace coordinated search algorithm for global optimization, with the decision variables divided into subgroups and optimization performed successively in the subspaces corresponding to the subgroups of variables. The idea behind the algorithm comes from the study of group behaviors of biological populations, where species are able to compete for resources yet find optimal strategies to co-exist and co-evolve. We show that such behaviors can be modeled as a multi-player evolutionary game, and framed as an optimization problem with each subgroup of variables considered as a strategy set to be determined by a subpopulation of species. Thus, the subspace coordinated search algorithm proceeds the same as an evolutionary game played among subgroups of species in a biological population. Naturally, the algorithm can be applied to ecological modeling. It can be extended to more general global optimization problems as well such as potential energy minimization for molecular conformation and protein folding, and beyond.

欢迎大家参加！