

Action IC1205 on Computational Social Choice: STSM Report

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Dates:	02/05/2016 to 06/05/2016

My STSM stay at the Université Paris-Dauphine was hosted by Jérôme Lang. Together with Andreas Darmann (University of Graz), Janosch Döcker (University of Tübingen), Britta Dorn (University of Tübingen) and Jérôme Lang (Université Paris-Dauphine) I continued previous work on a variant of the group activity selection problem (GASP). Andreas Darmann and Janosch Döcker also traveled to Paris with STSM funds.

We worked on the simplified group selection problem (s-GASP), where the agents' preferences only consider the various activities and not the number of agents assigned to a certain activity, in contrary to GASP we assume constraints on the number of agents which can be assigned to an activity. Nevertheless s-Gasp can be interpreted as a special cases of GASP. The goal in this framework is to find 'good' assignments with respect to appropriate stability and efficiency notions.

We were able to complete our results from the previous STSM in Tübingen. Furthermore we took into account a new natural stability notion, i.e. virtual stability. We were able to obtain complexity results, both for the question of the existences of such assignments and for maximizing the number of agents assigned to a non-void activity.

Considering the concept of individual rationality with the restriction that each activity can only take place with exactly two participants, the complexity of maximizing the number of agents assigned to a non-void activity remains an open question. Nevertheless we found a nice graph theoretic interpretation involving rainbow matchings.

In many ComSoC-frameworks there is a tension between stability and efficiency. We investigated the tension between envy-freeness and Pareto-optimality in s-GASP. Finally we also considered the approval scenario, where the agents' preferences are trichotomous.