COST Action IC1205 on Computational Social Choice: STSM Report

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In my stay at LIP6, we continued our study of strategic candidacy in elections – a voting setting where candidates have preferences about the outcome of the election and are free to join or leave the election. We have also collaborated with Jeromé Lang from LAMSADE Université Paris-Dauphine.

Our earlier work on this topic provides several results (both positive and negative) on the existence of Nash equilibria. During this mission, we managed to extend those results to other voting rules: specifically, we have shown that a Nash equilibrium is not guaranteed to exist for plurality with runoff and STV rules, even in the 4-player case.

We have also addressed the issue of existence of a Nash equilibrium with particular properties. Specifically, for Copeland and UC we had previously shown that there exists an equilibrium whose winner is the same as in the profile where all candidates are present (although there may exist other equilibria with other winners, too). We have now observed that the same property holds also for Condorcet consistent rules with 4 candidates, but is violated for Borda. For Condorcet consistent rules with 4 candidates, we have also shown that there always exists a preference profile for which each candidate can be a winner at some Nash equilibrium.