
Swiss National Ice Hockey Tournament (NLA)

Abstract: The National Swiss Association of Ice Hockey plans every year a fourfold round-robin tournament. In this tournament every of the 12 teams plays 4-times against each team. In every of the 44 rounds each team plays against another team. Furthermore, the 12 teams are partitioned into 3 groups of 4 teams each, and within the groups each team has to play two-times against each other. That means that another 6 rounds have to be scheduled – the so-called “derby rounds”. Hence, in total 300 games have to be scheduled within 50 rounds in a season.

Several hard conditions have to be considered:

1. In the first 25 rounds each team must play 2 (respectively 3) games against each other in the other groups (respectively in the same group).
2. Home and away games must alternate as much as possible. (3) Each teams should have the same number of home-game on a Saturday and Sunday if possible.
3. Some “high risk-games” must be fixed in particular rounds (at a fixed date).
4. At various dates certain stadiums are occupied by other events and game cannot be fixed at this locations.

The goal is to find a schedule that fulfills these condition as much as possible. We shows a mixed integer approach to formulate the problem and solve it with standard MIP-solvers.