Sports scheduling – Eliteserien and non-professional leauges in Norway

Lukas Bach, SINTEF

Abstract:

For professional sport federations, tournament schedules affect a variety of stakeholders (teams, television networks, fans, communities). The quality of such schedules affects the revenue of the teams (and federations themselves), as television networks are willing to pay higher broadcasting rights depending on whether the schedule meets certain requirements (e.g. games that draw larger audiences are scheduled on attractive dates). Fans often also decide whether to buy tickets based on similar reasons. Improved scheduling boosts attendance and generates a positive effect on the local economy. The Norwegian professional football league that we schedule is a double round robin tournament, i.e., a tournament where all teams meet each other once at home and away. To satisfy the stakeholders and thereby create better schedules we use a mixed integer programming model to schedule the top professional Norwegian football league. To solve this model it is necessary to decompose it into two parts. The approach applied is, at the first stage, assigning teams to a home / away pattern. In the second stage, we assign games to the individual rounds. All this subject to a set of home / away wishes from the clubs, game specific requirements from TV and the Norwegian football federation. By solving this problem, we are successfully able to get an optimised schedule. The work presented has been used to develop the schedule currently in use for the 2017 football season in Norway.