

Scheduling Argentina's professional basketball leagues: A variation on the Travelling Tournament Problem

Durán, Guillermo

Durán, Santiago

Marenco, Javier

Mascialino, Federico

Rey, Pablo A.

© 2018 Elsevier B.V. Operations research methods are applied to design the season schedules of Argentina's professional basketball leagues using a format adopted in 2014 by the top two divisions. Following the setup used by the National Basketball Association (NBA) in North America, games are played any day of the week and away games are scheduled in road trips of one to four consecutive games. The main scheduling objective is to reduce the teams' total travel distance compared to previous season formats through the use of predetermined trips submitted by the teams. The mathematical form of the problem is a variation on the well-known Travelling Tournament Problem. The modelling is divided into two successive stages, the first one defining the sequences in which each team plays the other teams and the second one assigning the days on which each game is played. Both stages use integer programming models that incorporate a series of constraints reflecting criteria requested by the Argent