Scoring coordination patterns in basketball International championships of National teams

Prieto J.

García J.

Ibáñez S.J.

The performance of two basketball teams can be analysed by exploring their different scoring dynamics on the basis of the two time series representing the scoring process of each team throughout the game. Existing studies following this approach focused mainly on regular season and playoff games in different basketball leagues. The aim of this study was to conduct this type of analysis on games of National Teams championships, focusing specifically on final round close games, as those in which medals are decided and teams perform in a very similar level. The study considers the final round games (i.e. semi-finals games, third-place game and final game) of the main men's professional basketball International Championships of National Teams (i.e. European Championships, World Championships and Olympic Games) played during the period 2005-2013. Different methods of time series analysis were used (i.e. autocorrelation and cross-correlation functions, double backward moving averages, Hilbert transform). The results revealed an increasing scoring coordination pattern between the teams as the games unfolded, showing extremely high coordinated behaviours in the 3rd and 4th quarters (i.e. similar scoring streaks by the two teams; back-and-forth scoring patterns). This suggests that are the first two quarters of the games those leading to major fluctuations on the scoreboard (i.e. game periods in which one team's scoring performance is very successful whilst the other team's is not). This study may be matter of interest to coaches and performance analysts in the field of basketball, providing practical information for specific games preparations in International Championships of National Teams.

Complex systems

Dynamical systems

Hilbert transform

Relative phase

Time series