



**INESCPORTO**<sup>®</sup>  
LABORATÓRIO ASSOCIADO

# Optimization in sports

7 NOVEMBRO 2008  
16H30

**Orador:**

Prof. Celso C. Ribeiro

**INESC Porto**

Campus da FEUP

Rua Dr. Roberto Frias, 378

4200-465 Porto

Tel. 22 209 4300

Professional sport leagues involve millions of fans and significant investments in players, broadcast rights, merchandising, and advertising. Multiple agents, such as the organizers, media, players, fans, security forces, and airlines, play important roles in the leagues and tournaments. Professional sports leagues are therefore part of a major economic activity and face challenging optimization problems. On the other side, amateur leagues usually do not involve impressive amounts of money, but instead the number of tournaments and competitors can be very large, also requiring coordination and logistic efforts.

The field of sports scheduling and management has been attracting the attention of an increasing number of researchers in multidisciplinary areas such as operations research, scheduling theory, constraint programming, graph theory, combinatorial optimization, and applied mathematics. Different optimization techniques have been applied to solve problems arising from sports scheduling and management. The hardness of the problems in the field lead to the use of a number of exact and approximate approaches, including integer programming, constraint programming, metaheuristics, and hybrid methods. Problems associated with the scheduling of round robin tournaments are of particular importance, due to their relevance in practice and to their interesting mathematical structure.

We review some applications of metaheuristics to different scheduling problems in sports, such as the travelling tournament problem, referee assignment, and the minimization of the carry-over effect. We also report real-life applications to tournament scheduling. Recent advances in metaheuristics are also illustrated in the context of these applications.

O Professor Celso Ribeiro é Licenciado em Engenharia Eléctrica pela Pontifícia Universidade Católica do Rio de Janeiro (1976), Mestre em Engenharia de Sistemas e Computação pela COPPE/UFRJ (1978) e doutorado em Informática pela École Nationale Supérieure des Télécommunications (1983).

É Professor Titular da Universidade Federal Fluminense. Foi professor titular da Pontifícia Universidade Católica do Rio de Janeiro, onde exerceu o cargo de Director dos Departamentos de Engenharia Eléctrica (1985-1989) e de Informática (1993-1995).

O seu trabalho de investigação foca, principalmente, as Ciência da Computação e a Optimização Combinatória, com ênfase em meta-heurísticas e processamento paralelo. Tem aplicações em diferentes temas, tais como: Projecto de Redes, Biologia Computacional e Optimização em Desportos.

É Membro Associado da Academia Brasileira de Ciências e Editor-Geral da revista *International Transactions in Operational Research*. Publicou mais de 90 artigos em periódicos internacionais, vários trabalhos em anais de congressos e 17 artigos em capítulos de livros. Editou ainda vários livros. Orientou diversas teses de Doutoramento e dissertações de Mestrado.

Para informações adicionais contactar: Ana Viana (aviana@inescporto.pt)