Departamento de Estadística e Investigación Operativa

Instituto de Matemática Interdisciplinar

CURSO DE DOCTORADO

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of the Serbian Academic of Sciences and Arts

On solving difficult problems in Optimization: Metaheuristics

Many problems studied in logistics and engineering among others, can be formulated as an optimization problem. There are exact methods to deal with them but sometimes they are not enough to found the optimal solution in a reasonable computing time, especially if they are NP-hard. Heuristic methods are searching methods cleverly built trying to find "good" solutions in the solutions space. They often obtain a local optimum. Metaheuristics are procedures that guide the search process combining the phases of intensification (local search) and diversification. However, metaheuristics cannot prove that the obtained solution is optimal. Some of the well-known metaheuristics such as simulated annealing, tabu search and genetic algorithms will be studied in the course. Finally, the so-named Variable Neighborhood Search (VNS) scheme will be presented as well as some applications where VNS outperforms other methods.

The expected outcomes of the course are the ability to recognize a problem that needs to be solved using metaheuristic methods and choose the right method for a particular problem. The contents are:

- Difficult problems in optimization and complexity of algorithms
- Metaheuristic methods
- Variable Neighborhood Search metaheuristic approach

Organizado por el Departamento de Estadística e Investigación Operativa,
el grupo de investigación de la UCM DEC-HUMLOG,
con la colaboración del Instituto de Matemática Interdisciplinar (IMI)

Fechas: 12, 13, 15 y 16 de diciembre de 2016
Horario: de 17:30 a 20:00 horas
Lugar: Aula 215 (Seminario Sixto Ríos)
Facultad de CC Matemáticas, UCM