

Metaheuristic optimization algorithms in electromagnetic devices design



10:00

29-30 Sept. – 1 Oct. 2025

Aula 203

ETSI - Universidad de Sevilla



Abstract: This course provides a comprehensive introduction to metaheuristic optimization algorithms applied in the design of electromagnetic devices. It covers the classification of optimization methods, formulation of optimization tasks including design variables, objective functions, and constraints, as well as normalization techniques. Key metaheuristic algorithms are presented, including Genetic Algorithms, Particle Swarm Optimization, Bat Algorithm, Gray Wolf Optimization, Cuckoo Search, Salp Swarm Algorithm, and Hybrid Cuckoo-Search. The course also addresses convergence analysis, methods for constrained optimization, and practical applications to the optimal design of electrical machines, illustrated through detailed examples and the lecturer's scripts.

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