

AEROSPACE ENGINEERING

Optimization Algorithms for cooperative systems

Funded By	Dipartimento DIMEAS FONDAZIONE CRT CASSA DI RISPARMIO DI TORINO [Piva/CF:06655250014]
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Context of the research activity	Optimization Algorithms and Performance Metrics Definition for small cooperative robotic systems
Objectives	The main idea is to improve the flying qualities of a small drones and the guidance capabilities of robotic systems, including the definition of performance metric parameters. Starting from these metrics, an optimized algorithm for on-board energy management system and for the trajectory planner will be considered. A computationally efficient algorithm should be designed, to provide real-time design for on-board systems. The main objective will be the implementation on robotic systems, considering swarms of multiple systems, and cooperative rendezvous will be considered as primary mission scenario.
Skills and competencies for the development of the activity	The candidate should have some knowledge of mechatronic and aerospace systems, on control laws based on cost optimization. Moreover, the candidate should have knowledge of embedded systems and on hardware for robotic systems.