
Dia 25/06/2024 das 15:00 às 17:00, Centro de Tecnologia/UFRJ - Sala H214

Load Transportation by Single and Multiple Aerial Vehicles

Abstract: This talk focuses on the development and experimental validation of advanced nonlinear control strategies for Aerial Uninhabited Vehicles (AUVs), with particular emphasis on load transportation by single and multiple quadrotor vehicles. The presentation will cover the design and rigorous experimental evaluation of control algorithms aimed at enhancing the capabilities of AUVs in handling complex transportation tasks. Key aspects include the development of feedback control strategies for global exponential stabilization of slung loads. Further discussion will delve into control strategies for formation flight, which are critical for coordinated multi-vehicle operations. Experimental results from the Sensor-Based Cooperative Robotics Research Laboratory (SCORE-Lab) at the University of Macau will be showcased, demonstrating the practical implementation and effectiveness of these strategies in real-world scenarios. This talk not only highlights significant advancements in control technology for AUVs slung load transportation but also illustrates the potential for future applications in aerial logistics and transportation.



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Short Bio: Biography. Short Biography: Carlos Silvestre (Senior Member, IEEE), received his Licenciatura and M.Sc. in Electrical Engineering and Computers, Ph.D. in Control Science, and Habilitation in Electrical Engineering and Computers from the Instituto Superior Técnico (IST), Lisbon, Portugal, in 1987, 1991, 2000, and 2011, respectively. He has been with the Department of Electrical Engineering and Computers at IST since 2000, on leave since 2012. He is currently a Professor at the University of

Macau's Faculty of Science and Technology. His research areas encompass linear and nonlinear control and estimation theory, hybrid systems, multiagent control systems, networked control systems, inertial navigation systems, and machine learning for control of autonomous systems, with a focus on unmanned ocean and air vehicles.