

TRACK 2: UAV / AERODYNAMICS

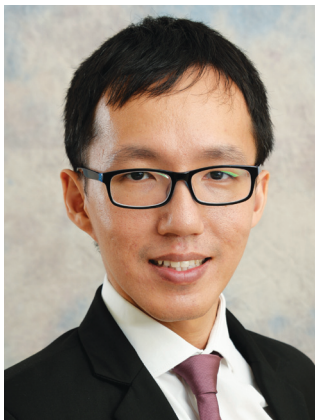
“ENHANCEMENTS TO HELICOPTER AERODYNAMICS – AN LEONARDO-NTU RESEARCH COLLABORATION”

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ABSTRACT

This paper will present the status of the research collaboration between Leonardo Company and Nanyang Technological University (NTU). As a key player in Aerospace, Defence and Security, Leonardo company is involved in the collaboration with NTU through its helicopter division, AgustaWestland. Three focus areas of collaborative research have been identified, looking into vortex generators (VGs), exhaust-fuselage interaction and fire suppression. The project includes both numerical and experimental investigations (PIV and surface flow visualizations), and preliminary numerical findings from the first year of the collaboration will be reported. In this paper, the focus will be on drag reduction through VGs where various configurations that are attached to the ramp of the helicopter are simulated to minimize flow separation. Additionally, it will present on fire suppression modelling and current progress on exhaust-fuselage interaction to identify heat signatures to mitigate aeromechanical problems.

BIOGRAPHY OF SPEAKER



Dr Ng Bing Feng is Assistant Professor with the School of Mechanical and Aerospace Engineering in Nanyang Technological University. He received his PhD from Imperial College London under the sponsorship of the Singapore National Research Foundation Energy Innovation Programme Office (NRF EIPO). Over the years, he has developed his own numerical model for unsteady aerodynamics, structural vibration, aeroelasticity and load analysis on flexible turbine blades, for which the results were presented at leading conferences and published in top-notch journals in the field of wind/marine energy. His current research interest is in aeroelasticity, helicopter dynamics, building and environment engineering and energy systems.