

MIDWEST MECHANICS SEMINAR

Vortex Dominated Flows: Can't live with them...Can't live without them...

MONDAY, DECEMBER 1ST, 2025
ARMS 1109 3:30PM-4:20PM

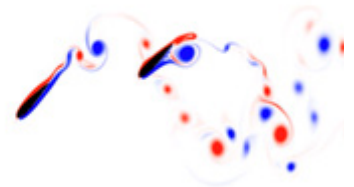
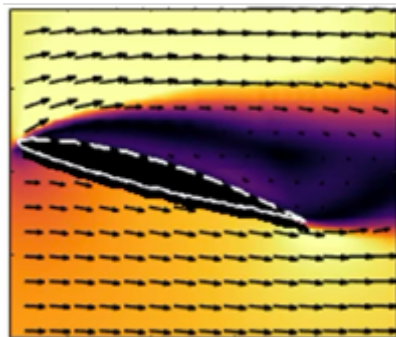
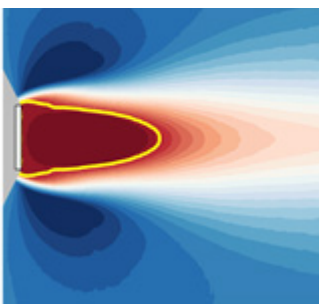


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Abstract

Vortex-dominated flows are in abundance in engineering applications and natural environment. Vortical structures influence not only the flow field but also have major implications on forces and moments experienced by objects as well as noise generated by them. In this talk, I will present results from work carried out in my group across different projects. We will focus on at least two case studies. The first is aimed at understanding the aerodynamic and aeroacoustics performance of stalled wings while the second will focus on swimming efficiency of marine reptiles in Mesozoic era. These case studies will show that the behaviour of vortex interactions have a profound impact well beyond their specific application and that understanding these interactions can spawn new applications in varied areas including flow manipulation and bio-inspired vehicle design.



Biography

Bharath Ganapathisubramani is a Professor of Experimental Fluid Mechanics in the Department of Aeronautics & Astronautics at the University of Southampton. He completed his Masters and PhD in Aerospace Engineering at the University of Minnesota and an undergraduate degree in Naval Architecture and Ocean Engineering at the Indian Institute of Technology-Madras. He was an Assistant Professor at Imperial College London (2007-2010) and moved to Southampton, where he was a Senior Lecturer (2010-2012) and then as Professor. He currently serves as an Associate Editor for Experiments in Fluids and Flow. He is a Fellow of Royal Aeronautical Society and the American Physical Society as well as an Associate Fellow of AIAA.