Noel Clemens

Clare Cockrell Williams Centennial Chair in Engineering

Department of Aerospace Engineering and Engineering Mechanics

The University of Texas at Austin

Austin, Texas, USA

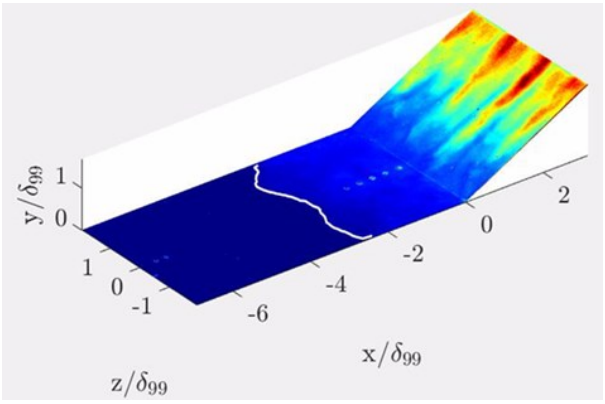
Seminar: Monday, February 23, 2026—10:30 A.M.—Chaf 101

https://purdue-edu.zoom.us/j/99329528962?pwd=dgGsl3fwr1vl2C7LBGzuwj2x6wjkjN.1

A Perspective on Three Decades of Shock-Wave / Boundary-Layer Interaction Research at UT Austin

Abstract:

Shock wave / boundary layer interactions (SBLIs) are an omnipresent feature of high-speed flight, and are particularly important in supersonic aircraft inlets and nozzles, and near control surfaces and base flows. These interactions are often associated with severe boundary layer separation that can lead to loss of control authority, and extreme pressure and heat loading on aerostructures. In this seminar, we will discuss experimental research conducted at UT Austin over the past 30 years on this topic. Over this time, we have witnessed an immense improvement in our ability to characterize the flow-field dynamics using high-speed diagnostics. The lecture will focus on SBLI dynamics, 3D SBLIs, and the flow-structure interaction induced by the presence of SBLIs over thin panels.



Biography:

Dr. Noel Clemens holds the Clare Cockrell Williams Centennial Chair in Engineering in the Department of Aerospace Engineering and Engineering Mechanics at The University of Texas at Austin. He received a B.S. in Mechanical Engineering from the University of Massachusetts/Amherst in 1985, and M.S. and Ph.D. degrees in Mechanical Engineering from Stanford University in 1986 and 1991, respectively. From 1991 to 1993 he was a post-doctoral fellow at the Combustion Research Facility at Sandia National Laboratories in Livermore, CA. Dr. Clemens began as an Assistant Professor at UT in 1993 and was promoted to full professor in 2005. He served as the Aerospace Engineering Department Chair from 2012 to 2020, where he started the nation's first undergraduate program in Computational Engineering, the Texas Rocket Engineering Laboratory, and Launch Texas – an aerospace tech entrepreneurship graduate specialization. He received the Presidential Faculty Fellow Award in 1995, the College's Faculty Excellence Award in 1997, the award for "Outstanding Teaching by an Assistant Professor" in 1998, the ASE/EM Department Teaching Award in 2000, the Lockheed Martin Award for Excellence in Engineering Teaching in 2011, and the AIAA Aerodynamic Measurement Technology Award in 2022. He is a Fellow of the AIAA and APS, and he served as Editor-in-Chief of *Experiments in Fluids* from 2009 to 2012. He was elected to the National Academy of Engineering in 2024.