UNIVERSITY CONSORTIUM FOR APPLIED HYPERSONICS SEMINAR SERIES

Tuesday, June 1, 2021 2:00 p.m. CST RSVP by May 31 at 5 p.m.

PERSPECTIVES ON HYPERSONICS

Abstract

The word "Hypersonics" is now generally accepted to refer to vehicles designed to fly faster Mach 5. Using this definition, technologies supporting flight have been investigated for more than 60 years and many research vehicles and operational systems have been developed. Today, interest in hypersonic systems is increasing as new generations of long-range, high-speed weapons are being pursued by advanced militaries around the world. Starting from fundamental principles, perspectives on hypersonics will be presented with an emphasis on hypersonic cruise and boost-glide weapons. With first generation systems already in development, technical challenges to be overcome will be discussed in the context of driving towards improving system performance and realizing the full potential of hypersonic flight.



Dr. David Van Wie

Head, Air and Missile Defense Sector Johns Hopkins University Applied Physics Laboratory

Dr. David Van Wie is the Head of the Air and Missile Defense Sector of the Johns Hopkins University Applied Physics Laboratory where he is responsible for strategic planning, execution, and performance of more than \$350M in annual funding in programs advancing the ability of the nation to defend itself and its allies against airborne and ballistic threats. Prior to his current appointment, he served as Mission

Area Executive for Precision Strike focusing on advanced weapon development, electromagnetic spectrum dominance, and novel long-range detection and targeting systems through revolutionary application of technologies in the areas of hypersonics, adaptive coordination of discrete kinetic and non-kinetic systems, and upstream data fusion. Dr. Van Wie is a member of the National Academy of Engineering, a fellow of the AIAA, and a recipient of the Air Force Award for Meritorious Civilian Service. Dr. Van Wie has been an active member of the U.S. science and technology community, and has published more than 140 papers in the fields of hypersonics, high-temperature fluid dynamics, airbreathing propulsion, and plasma aerodynamics. Dr. Van Wie earned his B.S. (summa cum laude), M.S., and Ph.D. degrees in aerospace engineering from the University of Maryland as well as a M.S. degree in electrical engineering from Johns Hopkins University.



