Wake Signature Detection
Geoffrey Spedding
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Thursday, April 13, 2017
Time: 9:30 – 10:20 AM
Location: 260 Willard
Coffee and donuts will be provided

Abstract:
The evolution of turbulence in a stratified medium has been of interest to climate and ocean modelers and for slightly different reasons, is also important for naval applications. In all cases, a unifying theme emerges where repeatable and persistent pattern and topologies of vortex and wave fields lead to energy and momentum budgets and fluxes that are quite different from their non-stratified counterpart. Here we review a body of work sponsored by the navy and consider extrapolations beyond that to patterns in fluids that surround us daily.

Bio:
Dr Geoffrey Spedding received his Ph.D. in 1981 from the University of Bristol, England. He began work as a Research Associate in the Department of Aerospace Engineering at the University of Southern California in the same year, where he worked on models of insect wings and then later on models of atmospheres and oceans. He became a full Professor in 2005, and Chair of the combined Aerospace and Mechanical Engineering Department in 2010.

His current research has three themes: (i) Geophysical Fluids: particularly the evolution of turbulence in oceans and atmospheres, and its relation to the persistence of wakes of islands and submarines; (ii) Advanced imagining and data analysis including accurate particle imagining velocimetry (PIV) techniques and novel 2D wavelet transforms and interpolation routines for scattered data; (iii) Aerodynamics of small flying devices, especially those where birds and bats coexist in engineering design space. Experiments in wind tunnels include those on simple fixed wings at USC and on flying birds and bats (at Lund University, Sweden).

He has published >60 full journal articles and has given >80 invited talks over the last 10 years. His work has been covered in the New York Times, the LA Times, CNN and BBC News. In 2010 he was elected Fellow of the American Physical Society. In 2013 he was awarded the Chaire Joliot at ESPCI, Paris.