

James Brasseur, Research Professor of Aerospace Engineering Sciences, University of Colorado Boulder



James Brasseur is currently Research Professor of Aerospace Engineering Sciences at the University of Colorado Boulder after 27 years as Professor of Mechanical Engineering, Biomedical Engineering and Mathematics at the Pennsylvania State University, where he retains Emeritus and Adjunct Professor status. Professor Brasseur has extensive expertise in turbulence, turbulent flows and predictions of turbulence and turbulent flow using direct numerical simulation and large-eddy simulation (LES). He has contributed to fundamental understanding of nonlinear interscale interactions in turbulence and has developed a 20-year career in analysis of atmospheric boundary layer structure and dynamics and micrometeorology using LES methods. He has also contributed to LES methodology, including SFS and surface stress models with application of prediction of atmospheric boundary layer dynamics. Dr. Brasseur began a 10-year effort in wind turbine response to atmospheric turbulence through grants from the NSF and DOE, the latter a large effort at Penn State involving 4 faculty and a collaborator at the National Center for Atmospheric Research. In addition Dr. Brasseur has a separate expertise in the integrated fluid/solid mechanics and physiology (“physio-mechanics”) of the gastro-intestinal tract funded through a series of NIH, NSF and pharmaceutical grants. Currently Dr. Brasseur is applying interscale dynamics methods developed early in his career to advance LES prediction of premixed turbulent combustion, and works with a group of pharmaceutical scientists to advance understanding and modeling of drug release, transport and absorption of pharmaceuticals in the gastro-intestinal tract. Professor Brasseur has been on governing boards of the American Physical Society (APS) and APS Division of Fluid Dynamics, was past president of the Dysphagia Research Society, was a Permanent Scientific Committee member for the World Organization for Specialized Studies on Diseases of the Esophagus (OESO), and was founding Chair of the APS Topical Group on the Physics of Climate. Dr. Brasseur is a member of the Johns Hopkins Society of Scholars and is Fellow of the American Physical Society.