FMRC Fluid Mechanics Seminar Series

Computational Analysis of Turbulent Swirling Flows in Industrial Gas Turbine Combustors

Ali Cemal Benim
Duesseldorf University of Applied Sciences

Thursday, January 23, 2014, 11:00-12:00
ITU Uçak ve Uzay Bilimleri Fakültesi, TAV Konferans Salonu

Topics:

- Role of swirling flows in gas turbine combustors
- Theories on swirl flow aerodynamics
- Problems associated with the development of swirl burners for lean premixed combustion
- Turbulence models for swirling flows

Biography: A. C. Benim (Prof. Dr.) received his B.Sc. and M.Sc. degrees in Mechanical Engineering at the Bosphorus University of Istanbul, Turkey, and his Ph.D. degree at the University of Stuttgart, Germany, in 1988. Following a post-doctoral period at the University of Stuttgart, he joined ABB Turbo Systems Ltd. In Baden, Switzerland in 1990. He was the manager of the "Computational Flow and Combustion Modelling" group. Since January 1996, he is Professor for Energy Technology at the Duesseldorf University of Applied Sciences, Germany. He authored numerous publications on various aspects of mathematical and computational modelling of heat and fluid flow, including: finite element methods in flow problems, the finite analytic method, Navier-Stokes solution techniques, lattice Boltzmann methods, turbulence modelling, combustion modelling, radiation modelling, two-phase flow modelling, erosion, turbomachinery, aerodynamics, acoustics, cooling, biofluid mechanics.