UNIVERSITY OF HYDERABAD
Centre for Modelling Simulation and Design

SEMINAR NOTICE

DATE: September 2, 2010
TIME: 3:30 pm
VENUE: Seminar Room
SPEAKER: Dr. Debasis Chakraborty,
                 Technology Director, Directorate of Computational Dynamics
                 DRDL, Hyderabad and Visiting Professor, CMSD

TITLE: Introduction to Computational Fluid Dynamics

ABSTRACT: In the first part of the lecture, a brief history of CFD, Properties and classification and various levels of approximations of the governing equations will be provided. Fundamental properties of difference equations along with the concepts of stability, convergence and consistency will be described. Different aspects of explicit scheme and implicit schemes will be explained. In the second part of the lecture, a brief account will be given on various processes involved in the CFD simulation. The development and applications of indigenous grid generators and flow solvers in solving complex aerodynamics problems in missile developments will be described. Few case studies related to CFD applications in missile propulsion design will be presented.

ABOUT THE SPEAKER: Dr. Debasis Chakraborty holds M. Tech in Computational Mechanics from IIT, Kharagpur and Ph.D in Aerospace Engineering from IISc. Bangalore. He started his career as Scientist/Engineer in Vikram Sarabhai Space Center, Thiruvananthapuram from 1986 to 2001 where he was involved in Aerodynamic design and analysis of various sounding rockets and satellite launch vehicles of ISRO. He joined DRDL in 2001 where at present he is a Technology Director of Computational Dynamics Directorate. He guides the group in numerical simulations of external and internal flows for missile aerodynamic and propulsion problems.

He was a AICTE-INAE Distinguished Visiting Professor in Aerospace Engineering at Indian Institute of Science (IISc) in Bangalore during 2007 – 2009 and at present is a Visiting Professor at CMSD. His research interests are in CFD, Aerodynamics, Propulsion, Turbulence and Combustion modeling, Transient and unsteady flows, Chaos and Numerical methods. He has published about 70 papers in various international journals and conferences in the area of CFD. He has reviewed many papers for international journals and chaired many important sessions in international conferences. He has guided engineering students from IISc. and other engineering colleges for their Ph.D/ M.S. degrees. He has delivered invited lectures in international conferences and workshops, Chaired important sessions of international conferences and reviewed papers for international journals and conferences. He is the guest editor of special issue of Defence Science Journal on CFD.