INSTITUTE COLLOQUIUM
INDIAN INSTITUTE OF SCIENCE
BANGALORE

PROFESSOR S. M. DESHPANDE
DEPT. OF AEROSPACE ENGINEERING

will deliver a lecture

on

KINETIC NUMERICAL METHOD
From Research Laboratory to Applications in High Speed Aerodynamics

on Monday,   23 April 2001
at 4.00 PM in the Faculty Hall.

The Director
will preside.

All are cordially invited.

Coffee: 5.00 PM
Reception Hall

Prof. S. S. KRISHNAMURTHY
Convener

ABSTRACT

Many problems in **high-speed aerodynamics** pertaining to the design of launch vehicles, missiles, and fighter aircraft require numerical solutions of partial differential equations of fluid dynamics. These equations are suitable *moments* of the Boltzmann equation of the kinetic theory of gases. This connection between continuum mechanics and kinetic theory has been exploited over the past 15 years to develop and refine an entirely new class of numerical methods, called the kinetic numerical method or, more specifically, the Kinetic Flux Vector Splitting (KFVS) method. This method has proved to be extremely successful for the computation of flows around many flight vehicle configurations, and has led to a new class of meshless methods applicable to complex aerospace configurations. The results of these studies will be presented during the colloquium.