

Meeting: 1003, Atlanta, Georgia, SS 29A, AMS Special Session on Mathematical Sciences Contributions to the Biomedical Sciences, I

1003-92-642 **Mihaela D Iftime*** (mihaela.iftime@bos.mcphs.edu), 179 Longwood Avenue, Boston, MA 02215. *Applications of Navier Stokes equations in blood dynamics.*

The study of blood flow in large and medium arteries is a very complicated task due to the extreme complexity of blood and arterial wall dynamics. A fluid dynamical model would have to include also the effects of three-dimensionality as a result of the rapid quasi-inviscid flow being squeezed through the long curved aortic vessel.

I will discuss a mathematical model of blood flow using Navier-Stokes equations. The incompressible Navier-Stokes equations govern the "conservation of momentum" and the continuity equation represents the incompressibility constraint or the "conservation of mass". Suitable boundary initial conditions on the wall are imposed. (Received September 25, 2004)