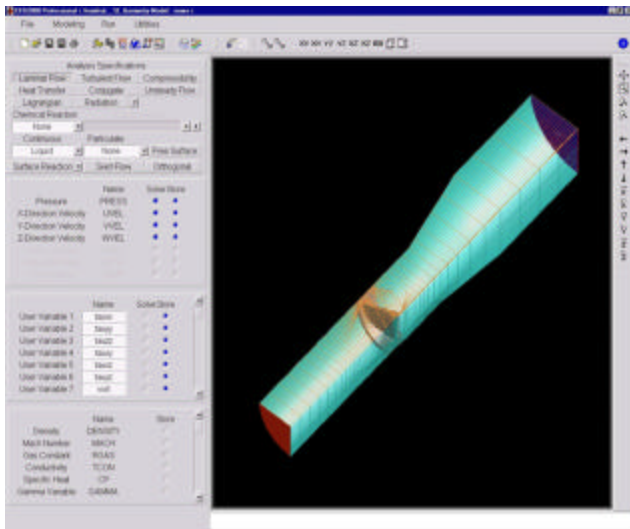


### Performing Fluid-Structure Interaction Analysis on a Mechanical Heart Valve

**Adaptive Research**  
*A division of Simunet Corporation*

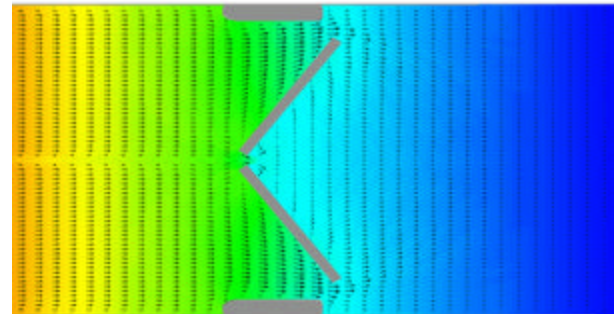
Computational Fluid Dynamics is an effective tool used in the design of mechanical heart valves, and can obtain flow structure data in regions inaccessible experimentally, such as the socket area. Numerical simulations also provide important information on locations of high shear rates in the flow, which are known to play a significant role in damaging blood cells. Fluid-structure interaction techniques are used to simulate the physiological behavior of the prosthetic heart valve during the cardiac cycle and improve the overall accuracy and smoothness of the flow solution.



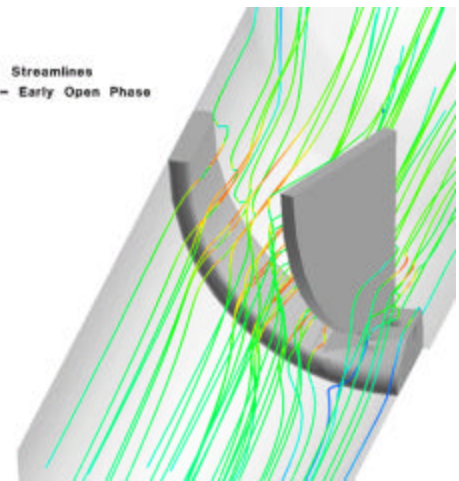
### STORM®/CFD2000®

A powerful computational fluid dynamics software program developed by Adaptive Research. STORM/CFD2000 solves real-world engineering problems by simulating virtually any physical process involving fluid flow and heat transfer.

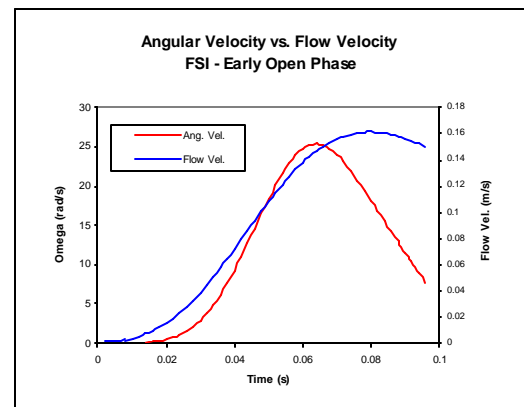
Pressure Distribution and Velocity Vectors  
FSI - Early Open Phase



Streamlines  
FSI - Early Open Phase



Flow Analysis – Early Valve Opening



FSI Analysis – Early Valve Opening