



سمینار هفتگی گروه ماده چگال نرم

Immersed Boundary method and its application to biological systems

A. B. Besya

For the past few decades, tremendous research efforts have been directed to the development of modeling and simulation approaches for fluid–structure interaction problems. In the 1970_s, Peskin developed the immersed boundary (IB) method to study flow patterns around heart valves. The mathematical formulation of the IB method employs a mixture of Eulerian and Lagrangian descriptions for fluid and solid domains. In this method, the entire fluid domain is represented by a uniform background grid, which can be solved by finite difference methods with periodic boundary conditions, whereas the submerged structure is represented by a fiber network. The interaction between fluid and structure is accomplished by distributing the nodal forces and interpolating the velocities between Eulerian and Lagrangian domains through a smoothed approximation of the Dirac delta function. Here we review recent application of IB method in biological systems.

زمان: شنبه 87/2/14 ، ساعت 15:30

مکان: آمفی تئاتر دانشکده فیزیک

قطب ماده چگال و سیستمهای پیچیده