

國立中山大學應用數學系

學術演講

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講題：Immersed boundary methods for endocytosis

時間：2015/6/11（星期四）14：10～15：00

地點：理學院四樓理 SC 4009-1 室

茶會：13:40 於理 SC 4010 室（系辦公室）

摘要

Endocytosis is one of the cellular functions for capturing (engulfing) vesicles or microorganisms. Understanding the biophysical mechanisms of this cellular process is essential from a bioengineering point of view since it will provide guidance for developing effective targeted drug delivery therapies. In this talk, we introduce an immersed boundary (IB) method that can be used to simulate the dynamical process of this important biological function. In our model, membranes of the vesicle and the cell are treated as Canham-Helfrich Hamiltonian interfaces. The membrane-bound molecules are modelled as insoluble surfactants such that the molecules after binding are regarded as a product of a “chemical” reaction. Some numerical simulations will be presented as well.

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