Computational Mechanics in Cell Biophysics: Membrane Dynamics and Euglenoid Motility

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ABSTRACT

The quantitative and detailed predictions granted by computational mechanics are a very useful complement to biophysical experiments. We will report on two examples in which continuum models and simulations have decisively contributed to understanding complex biological systems: the dynamical morphological changes of confined lipid bilayer membranes [1,2] and the motility strategy of the euglenoids [3], a family of microorganisms. In both applications, the modeling and simulations is motivated by experimental observations, and have implications in bio-engineering applications, and in the physical understanding understanding of the biology of cells.

REFERENCES

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