Laboratoire de Biochimie Théorique
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S E M I N A I R E

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« Coarse-grained modelling of nucleic acids for biology and nanotechnology »

We present a coarse-grained model of DNA and RNA. The models are parametrized to reproduce mechanical, structural and thermodynamical properties of DNA and RNA and allow for efficient simulation up to hundreds of nucleotides on a single CPU and thousands of nucleotides on GPU.

We demonstrate the versatility of the models by applying them to a study of various DNA and RNA systems, including DNA hybridization, RNA and DNA strand displacement reaction, RNA pseudoknot folding, and RNA plectonemes.

The source codes for both DNA and RNA models are available at dna.physics.ox.ac.uk

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Vendredi 8 juillet 2016
14h30

Bibliothèque