

MONTE CARLO SIMULATIONS OF BIOPHYSICAL SYSTEMS.
A COARSE-GRAIN APPROACH

Rita S. Dias

Biophysics and Medical Technology, Department of Physics, Norwegian University of Science and Technology, NO-7491 Trondheim, Norway

Soft matter physics approach to biological systems has received increasing interest. Chromatin condensation and dynamics in eukaryotic cells, for example, have been studied using a range of approaches including experimental, theoretical and modeling techniques.

Coarse-grain modeling, in particular, has been used with surprisingly good results.

Here we will present on-going investigations that use simple models to describe (i) the role of protein self-association in DNA condensation and nucleoid stabilization in bacteria model cells and (ii) the interactions between weak-acids and nanoparticles.