Topological aspects of chromosome folding

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Abstract

Very recently, conspicuous effort has been dedicated to describing and predicting the three-dimensional organization of chromosomes inside the eukaryotic nucleus by generic polymer models [1].
In my talk, I will discuss recent results showing that chromosome structure and dynamics can be quantitatively described by a polymer model of decondensing chromosomes which takes into account only minimal physical ingredients like density, stiffness and topology conservation of the chromatin fiber [2-4].

Then, I will present some recent results concerning how this model can be employed in order to investigate the origin of the visco-elastic properties of the nucleus [5].

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