

Postdoc position in biological physics: *Polymer modeling of chromosome organization*

Our group is looking for a postdoc in biological physics to work on chromosome folding in close collaboration with experimentalists.

Context: Inside the cellular nucleus, DNA is tightly packed into a polymer-like structure called chromatin. Characterizing how chromatin self-organizes is one of the major challenges faced in recent years by biology. During the last decade, thanks to the development of advanced experimental techniques, major progresses have been realized in our understanding of the multi-scale chromosome organization during interphase. An increasing number of experimental evidences has suggested that the spatio-temporal organization of the genome may play a decisive role in the regulation of gene expression and in diseases. It is therefore of high importance to better characterize the mechanisms driving such organization.

Objectives: The postdoctoral fellow will develop a research activity on the modeling of chromosome folding and dynamics in somatic and germ cells. It will involve the development of original models coupling statistical and polymer physics, of efficient simulation schemes, and of statistical tools to analyze experimental data. The candidate will have the opportunity to collaborate with experimental biology groups, working on various species and systems.

Environment: The candidate will integrate our group 'Physical Biology of Chromatin' that mainly focuses on understanding the fundamental bases of chromatin and gene regulation using physical modeling and computational approaches within a strong interdisciplinary environment. Our innovative research is conducted in close interaction with top-leader experimental partners. The group is integrated within the Laboratory of Biology and Modeling of the Cell that aims to characterize the molecular bases underlying the organization and functioning of cellular processes in normal and pathological conditions . It is based at Ecole Normale Supérieure de Lyon, a French top-leading research and educational institute.

Profile of the candidate: We are looking for a creative and highly motivated candidate with a strong background in statistical or polymer physics, in computer science or in computational biology. Advanced skills in programming is required and a previous interdisciplinary experience in connection with biological issues would be a plus.

To apply, please send your CV and a motivation letter to Daniel Jost at
daniel.jost@ens-lyon.fr