Institute of Biophysics

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Master Thesis project

Biophysical and biochemical studies of chromatin fibers

In eukaryotes the DNA is compacted into chromatin the which that has to fulfil two opposing functions: a high com-paction of DNA and fast access to the genomic information. DNA storage in eukaryotic cells exhibits several levels of com-paction and one important structural feature is the so called chromatin fibre. In spite of large experimental efforts in recent years, many questions about the packing of DNA in nucleosomal arrays are waiting for an answer. Solving these problems will be indispensable for the complete understanding of basic cellular processes involving the DNA.

The aim of proposed master thesis will to understand the architecture and dynamics of chromatin fibers. In particular, it will be important to establish a crosslinking protocol for chromatin arrays to observe them using super-resolution microscopy (AFM, STORM, STED). This project will combine both working in biochemistry lab and measuring prepared samples using novel microscopic methods.

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