

laden gemeinsam zum

GASTVORTRAG

Jan Paleček**Masaryk University, Brno, Czech Republic****“Visualization of protein complexes: from protein interactions to cellular processes”****Abstract:**

Most of the cellular processes are driven by protein activities. For example, chemical energy is generated by ATP synthases, replication is driven by PCNA clamp, transcription is regulated by transcription factors, DNA is structured by histones and SMC proteins etc. Most of the cellular proteins, however, exist and function as multi-subunit complexes (such as ATP pump, replisome, enhanceosome, nucleosome etc.). Such complexes are assembled thru multiple protein interactions, which determine their architecture, function and dynamics.

In this lecture, several protein complexes will be shown in a bottom up way i.e. starting from single protein/subunit interactions to complexes and further to large molecular assemblies. I will review state-of-the-art experimental methods for protein/complex analysis and their output formats, including animations of molecular machines. Use of visualization techniques for protein complex animations and their potential for description of dynamic cellular processes will be discussed.

Biography:

Jan Paleček is a biochemist whose long-term interest is in protein interactions and architecture of protein complexes. He studied numerous protein-protein and protein-DNA interactions including “Guardian of genome” p53. His experience with these topics is reflected in his semestral course on “Structure and function of protein complexes” (lectured at Masaryk University, Brno, CZ).

Jan’s most recent research is focused on architecture of Structural Maintenance of Chromosome (SMC5/6) complexes, which are involved in chromosome maintenance and dynamics. In his laboratory, several experimental and in silico approaches are being used to explore SMC5/6 subunits. Special interest is on interactions of the SMC5/6 subunits and their evolution.

Datum: 04. Dezember 2015, 10:30 Uhr s.t.**Ort:** TU Wien, Favoritenstr. 9, Stiege 1, 5. Stock, Seminarraum E186