



SEMINAR

October 19th, 2010, 11.15 a.m. – DESY Bldg. 49, Room 108

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The effects of radiation damage on single molecule imaging at XFEL - model and results

Single molecule imaging is a major project for XFEL. It involves many difficult steps which have to be solved to reach the final goal. One of the most important questions is the sample deterioration during the measurement which is the main topic of my talk. In the era of the synchrotrons, radiation damage of the sample in the probe beam has prevented atomic resolution imaging of single bio- particles. The harmful effects of the damage will still influence the structure reconstruction using the XFEL. However, due to the extreme properties of the pulses (<100fs pulselength and high intensity), the difficulties might be overcome. A general view on the steps of structure determination of single particles is to be presented. I give a detailed description of the damage model we developed at the Research Institute for Solid State Physics and Optics. Beyond the main results of the physical model, computational implementation and some hardware realizations will also be discussed.

Host: Robin Santra, CFEL Theory Group