CFEL SCIENCE

SEMINAR

2nd December 2011 – 11:00
FLASH HALL (28c) - Seminar Room

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Coherent X-Ray Imaging and Microscopy for Life Science Applications

Visible-light microscopy is a standard and widely used tool with a broad range of applications in science, industry and everyday life. Besides standard bright-field imaging, many more contrast mechanisms have been developed, and dark-field-imaging, phase-contrast, confocal and fluorescence microscopy are routine methods in today's light-microscopy applications. In x-ray microscopy, or more generally x-ray imaging, the development of a similar range of contrast modalities proceeded much more slowly and is still a very active field of research.

This presentation will focus on our recent contributions to this field and discuss the development of two novel coherent x-ray imaging and microscopy methods and their application to biology and medicine on length scales ranging from the nanoscopic to the macroscopic samples.

References:

- Jensen et al, NeuroImage 57, 124 (2011)
- Dierolf et al, Nature 467, 436 (2010)
- Thibault et al, Science 321, 379 (2008)
- Pfeiffer et al, Nature Materials 7, 134 (2008)
- Pfeiffer et al, Nature Physics 2, 258 (2006)

Host: Andrea Cavalleri, CFEL Condensed Matter Division