CFEL SCIENCE

SEMINAR

24th September 2012 - 11:00 a.m.
Building 99, seminar room IV-O1.111

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Fiber lasers in conjunction with super continuum generation and nonlinear frequency conversion in nonlinear crystals offer a uniquely versatile technology platform for high power mid-IR frequency combs and potential frequency comb extension to the XUV via high harmonic generation. We discuss state of the art mid-IR and XUV laser systems based on Tm and Yb fiber lasers respectively. We introduce the capabilities of Tm and Ho fiber lasers as high power pulse sources near 2000 nm and include recent results based on Tm fiber pumped doubly-resonant OPGaAs optical parametric oscillators and OPO frequency control. We further review the current state of the art of high power Yb fiber comb lasers and their application to high power XUV generation in enhancement cavities and XUV precision spectroscopy. We conclude with a discussion of some emerging applications, such as the use of fiber frequency combs as precision wavemeters and frequency synthesizers for precision spectroscopy in the mid IR spectral region.

Host: Axel Rühl, CFEL UX Seminar