

FAKULTÄT für PHYSIK
LUDWIG-MAXIMILIANS-UNIVERSITÄT
MÜNCHEN/GARCHING

PHYSIK-DEPARTMENT
TECHNISCHE UNIVERSITÄT MÜNCHEN
MÜNCHEN/GARCHING

MLL-KOLLOQUIUM

Donnerstag, 18.12.2014, 16¹⁵ Uhr

Seminarraum 127, TUM, Physik II, Erdgeschoss/Nord
Treffen zum gemeinsamen Kaffee 16 Uhr

Prof. Paul Bolton

(LMU Munich - Medical Physics)

Advancing Particle Accelerator Development with Laser-driven Proton (Ion) Sources: Accelerator Perspective and Prospects

The development of laser-driven particle accelerators can be regarded as a natural progression in our history and therefore imminent. The contribution of lasers to advancing particle accelerators must be viewed in the overall context of accelerator development similar to the arrival of the klystron tube decades ago. We know that laser sources and microwaves are closely connected. In addition to the promise of laser-driven particle accelerators, the combined capabilities of lasers (optical waves) and microwaves have ushered plasma photonics, laser-plasma focusing of relativistic particles, photo-injectors, ultrafast bunch diagnostics and more. I will describe typical features of proton bunches accelerated by the laser-plasma field in the context of ILDIAS (the integrated laser-driven ion accelerator system). Discussion of progress with various components of ILDIAS will include single shot energetic proton yields from ultra-high intensity laser-plasma interactions and the challenges that we must address to build controlled, stable, repetition-rated accelerator beam lines for an assortment of applications. Perhaps the best example of this natural progression and a basis for tacit optimism is the advent of the laser itself.

gez. Peter Thirolf
Tel. 289-14064

gez. Norbert Kaiser
Tel. 289-12367