

FAKULTÄT für PHYSIK  
LUDWIG-MAXIMILIANS-UNIVERSITÄT  
MÜNCHEN/GARCHING

PHYSIK-DEPARTMENT  
TECHNISCHE UNIVERSITÄT MÜNCHEN  
MÜNCHEN/GARCHING

## MLL-KOLLOQUIUM

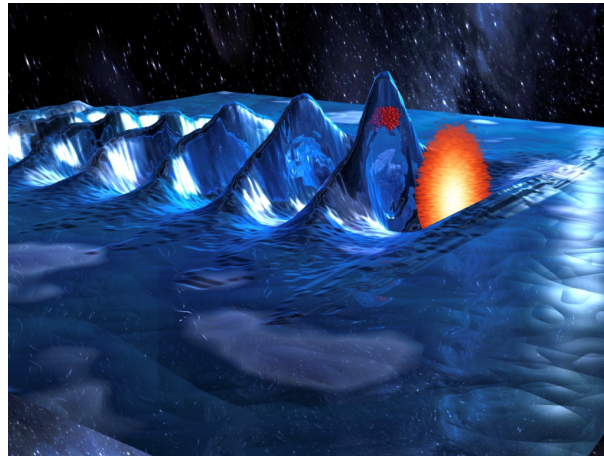
Donnerstag, 25.07.2019, 16<sup>15</sup> Uhr

Hörsaal der LMU in Garching, Am Coulombwall 1  
Treffen zum gemeinsamen Kaffee 16 Uhr

Prof. Victor Malka

(Weizmann Institute of Science, Rehovot, Israel and Laboratoire d'Optique  
Appliquée, CNRS, Ecole Polytechnique, ENSTA Paristech, Palaiseau, France)

### Manipulating Electrons with Intense Laser Pulses



Laser Plasma Accelerators (LPA) rely on our ability to control the electrons motion with intense laser pulses. The manipulation of such relativistic electrons allows a fine mapping of the longitudinal and radial components of giant electric fields with values that can exceed hundreds of GV/m. This control is crucial to optimize the design of laser plasma accelerators for delivering ultra-short and ultra-bright energetic particle or radiation beams. To illustrate the beauty of laser plasma accelerators I will show some concepts that give improvements the quality of the electron beam, its stability and its energy gain, and its divergence. I will then show how by controlling the quiver motion of relativistic electrons intense and bright X-rays beam are produced in a compact and elegant way. Finally I will show some examples of applications.

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