“CONTROL OF LASER ACCELERATED IONS”
Friday, January 31, 2014
1:00pm – 2:00pm Room 479, EBU-II

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Abstract
This seminar will review some recent results we obtained at LULI on laser-acceleration of MeV-ions, using intense, short-pulse lasers, and related applications. I will first review some recent results obtained in transiting from the common surfacic process of laser-acceleration of ions from solid foils to a volumetric one from low-density plasmas, which not only relaxes constraints on the laser and target parameters, but also allows moving toward high-repetition rate targetry better adapted to the next generation of high-power lasers. I will then present other results obtained recently on the topic of controlling the beam, i.e. on focusing it, with various techniques and assessing their respective interest, merit and shortcomings, as well as on energy-selecting it. I will finally review some recent use of those techniques, e.g. to measure ion stopping in dense, hot plasmas, or producing short-pulse neutron sources.

Bio
Julien Fuchs is an experimental physicist in the field of high power laser-plasmas working on fusion plasmas, both with long and short pulses, particle acceleration, plasma optics and magnetized laboratory astrophysics. He obtained an engineering degree in optics in 1992, and worked in the industry before going into research for a Ph.D. which he received from Université du Québec (Canada) in 1998. He joined CNRS (France) in 1998, did a sabattical in the US, with a stay at General Atomics, and is now senior researcher at the LULI laboratory. He is also professor at Ecole Polytechnique (France).