



**5<sup>th</sup> July 2011 - 14:15**  
FLASH HALL (28c) - Seminar Room

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## From medical imaging, over FELs to high-energy physics: Physics and applications of laser-plasma accelerators

The starting point of laser-plasma accelerators lies back more than 30 years, with a seminal theory paper. However, only the availability of high-power lasers made it possible to conduct first ground-breaking experiments over the last years. First, the so-called bubble regime was demonstrated, and soon after the 1.0 GeV energy level was reached.

Nowadays even first application experiments for light generation are seen, such as betatron sources or laser-driven undulator radiation. In this talk we will discuss the key elements of laser-plasma acceleration and why this ultra-high gradient approach may pave the way towards novel medical imaging, driving table-top FELs, and a new concept for linear colliders. Also the new plasma acceleration projects at DESY will be presented.

Host: Martina Dell'Angela & Wilfried Wurth, UHH-ASG