

Victor Malka:

Laser-plasma accelerators

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Laser plasma accelerators provide electron beams with remarkable parameters. Based on the use of giant longitudinal electric fields that result from the interaction of an intense laser pulse with a plasma medium, laser plasma accelerators offer today the possibility to generate, in a compact and reproducible way, energetic electron beams with tuneable parameters. Different schemes of injection, such as the forced laser wake field [1], the bubble/blow out regime [2], or the colliding laser pulses [3], have been recently demonstrated at LOA. These electron beams with peak current of a few kA [4] are of interest for a very broad range of applications in medical, biological, chemistry or material science domains [5]. They are also of major interest for the production of very bright X/gamma ray beams [6]. I report here on the evolution of laser plasma accelerators developed at LOA and on very recent achievements we performed on the applications side.

References

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