

## Channeling 2018



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# Challenges of High Repetition Petawatt Lasers

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The basic principles of laser acceleration using a short pulse Petawatt laser are well established, and now is probably the right time to consider them as an interesting alternative to conventional accelerators, with some restrictions on one side and some advantages in other side. There are now a few Petawatt lasers at one shot per second operative around the world (Berkeley, Dresden and Salamanca). There are also a few ones with higher repetition rate under construction. Those lasers with a convenient beam delivery and new-generations of multi-shot targets are a quite interesting alternative.

One of the main point to discuss is that laser based experiments have to be designed from the very beginning as so. In many cases laser community is trying to mimic too much the conventional accelerators community and this is a waste of resources. High repetition rate laser accelerators have different characteristics and have to be used having this in mind.

Of course, among those lasers is our VEGA Petawatt laser, 30 J / 30 fs at one shot per second. Our experience is going to be presented. Moreover VEGA is open to the international community through competitive access.

**Primary author:** Prof. ROSO, Luis (Director of the Spanish Center for Pulsed Lasers, CLPU. and Professor of Applied Physics at the University of Salamanca)

**Presenter:** Prof. ROSO, Luis (Director of the Spanish Center for Pulsed Lasers, CLPU. and Professor of Applied Physics at the University of Salamanca)

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