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The Extreme Light Infrastructure (ELI) - from distributed implementation to unified operation

Wednesday, 16 September 2015 16:00 (30 minutes)

The Extreme Light Infrastructure ELI (www.eli-laser.eu) will be the world's first international user facility for laser-based research and applications. In 2015, while nearing completion of its construction, ELI was selected as one of the "ESFRI Landmarks"for its role as reference project of scientific excellence and of competitiveness of the European Research Area.
ELI is dedicated to fundamental research in the light-matter interaction field in the laser intensity regime up to 1023W/cm2, and beyond. ELI's laser technologies are mainly based on chirped pulse amplification of femtosecond optical pulses in broadband solid-state laser materials and/or nonlinear crystals. Single-beam laser peak-power will exceed 10PW (1016Watt). Diode pumping will allow for up to 10Hz operation at the multi-Petawatt level.
ELI is presently being built as a distributed research facility in the Czech Republic, Hungary and Romania, and user operation is scheduled to begin in 2018, very likely as an European Research Infrastructure Consortium (ELI-ERIC).
The talk will briefly discuss some of the novel research opportunities at ELI, from photonuclear science to tracking ultrafast electro-nuclear wave packets in atoms and molecules or applications of secondary radiation and particle beams.

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