High-intensity research infrastructure at ELI Beamlines

ONDREJ KLIMO, ELI Beamlines, Institute of Physics of the ASCR — The L4 laser (10 PW, 150 fs) at ELI Beamlines is expected to provide focused intensities approaching 10^{23} \text{ W/cm}^2 and thus herald a new era of research in ultra-high intensity laser matter interaction. This talk will describe the progress in enabling the associated technological infrastructure - including the laser system, beam transport, diagnostics and the experimental chamber [1]. Synergistic experimental and theoretical programs are also developing tools for such research. The talk will also briefly describe these research areas like development of dedicated diagnostic equipment, efforts toward obtaining ultra-high intensities using tight-focusing and theoretical modeling toward future experiments where radiation reaction in the classical and quantum regime and pair production start to play an important role.


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2on behalf of the R5 and R6 teams of ELI Beamlines

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