

The ELI-NP Project: Towards Experiments with Intense Gamma-Beams

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Extreme Light Infrastructure (ELI) Pan-European facility initiative represents a major step forward in quest for extreme electromagnetic fields. Extreme Light Infrastructure Nuclear Physics (ELI-NP) is one of the three pillars of the ELI facility, that aims to use extreme electromagnetic fields for nuclear physics and quantum electrodynamics research. At ELI-NP, high power laser systems together with a very brilliant gamma beam are the main research tools. Their targeted operational parameters will be described. The related experimental areas will be presented, together with the main directions of the research envisioned. The different instruments which are considered to operate in the ELI-NP experimental halls will be reported, with an emphasis on the instrumentation which is designed for nuclear structure, reactions and astrophysics research.

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