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## High Power Laser System at the Extreme Light Infrastructure – Nuclear Physics

Friday, 7 July 2017 11:10 (20 minutes)

Extreme Light Infrastructure – Nuclear Physics (ELI-NP) will be a new Center for Scientific Research to be built by the National Institute of Physics and Nuclear Engineering (IFIN-HH) in Bucharest-Magurele, Romania. The Extreme Light Infrastructure was included in the 2006 Roadmap of the European Strategic Forum for Research Infrastructure (ESFRI). ELI-NP is a complex facility which will host two state-of-the-art machines of high performance, unique in the world through the design parameters: a very high intensity laser system with two 10 PW laser beams (HPLS), and a very intense, brilliant  $\gamma$  beam (GBS).

The ELI-NP HPLS is a Ti:Sapphire, hybrid CPA system and it has six optical outputs: two 0.1 PW outputs running at 10 Hz repetition rate, two 1PW outputs running at 1 Hz and two 10 PW outputs running at 1 shot per minute. This laser system is produced by a consortium formed by THALES Optronics and THALES Systems Romania. The Laser Beam Delivery (LBD) system interfaces the HPLS with the Nuclear Physics facility and with the experiments. It comprises the optical output delivery, laser pulse adaption on demand, pulse quality management, and electronic synchronization of the HPLS with the GBS and with the experiments. During my presentation, I will concentrate on the HPLS description and integration in the ELI-NP facility.

**Apply to be considered for a student award (Yes / No)?**

No

**Level for award (Hons, MSc, PhD, N/A)?**

N/A

**Would you like to submit a short paper for the Conference Proceedings (Yes / No)?**

Yes

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