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## **EUV FEL light source based on energy recovery linac with on-orbit laser plasma injection**

*Monday, 20 May 2024 16:00 (2 hours)*

We report on a week-long study of a conceptual design of EUV FEL light source based on an energy recovery linac with on-orbit laser plasma accelerator injection scheme. We carried out this study during USPAS Summer 2023 session of Unifying Physics of Accelerators, Lasers and Plasma applying the art of inventiveness TRIZ. An ultrashort Ti-sapphire laser accelerates electron beams from a gas target with mean energy of 20 MeV, which are then ramped up to 1 GeV in a five-turn scheme with a series of fixed field alternating magnets and two superconducting RF cavities (100 MeV per cavity per turn). The electron beam is then bypassed to an undulator line optimized to generate EUV light of 13.5 nm at kW level in a single pass.

### **Footnotes**

### **Funding Agency**

### **Paper preparation format**

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### **Region represented**

North America

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