The COXINEL seeded Free Electron Laser driven by the HZDR Laser Plasma Accelerator

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The COXINEL line implemented on the Laser plasma accelerator of Salle Jaune at Laboratoire d'Optique Appliquée enabled to achieve a mastered electron beam transport [1] and a controlled undulator radiation [2]. The line has been moved to Helmholtz Zentrum Dresden Rossendorf and installed on the 100 TW branch of the DRACO laser, on which high quality laser plasma accelerated electrons [3, 4] are produced. Seeded Free Electron Laser at 270 nm, using these generated electron beams, has been experimentally demonstrated [5] in 2022 and is reported here. These results are comforted by ELEGANT and GENESIS simulations.

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