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## THz SASE FEL at PITZ: lasing at a wavelength of 100 $\mu$ m

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Development of an accelerator-based tunable THz source prototype for pump-probe experiments at the European XFEL is ongoing at the Photo Injector Test facility at DESY in Zeuthen (PITZ). The proof-of-principle experiments on the THz SASE FEL are performed utilizing the LCLS-I undulator installed in the PITZ beam-line. The first lasing at a center wavelength of 100  $\mu$ m was observed in the summer of 2022. The lasing of the narrowband THz source was achieved using an electron beam with an energy of  $\sim$ 17 MeV and a bunch charge up to several nC. Optimization of beam transport and matching resulted in the measurement of THz radiation with a pulse energy of tens of  $\mu$ J, measured with pyroelectric detectors. The THz FEL gain curves were measured by means of specially designed short coils along the undulator. The results of the first characterization of the THz source at PITZ will be presented.

### Funding Agency

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### Footnotes

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Yes

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