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## Conceptual facility design of the Dresden Advanced Light Infrastructure

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

The ELBE radiation source at HZDR has a long success story of delivering bright and powerful infrared and THz beams to a broad user community. Following the science driven user requests we have written a conceptual design report for the Dresden Advanced Light Infrastructure (DALI) as a successor to ELBE.

The proposed DALI facility aims to increase the spectral brightness and pulse energy by orders of magnitude while providing two decades of tunability over the whole THz spectrum. It utilizes different radiation production schemes adapted to the wavelength range - super-radiant undulator sources for the long-wavelength THz range and an optical klystron driven by an oscillator FEL for the far-IR range. All sources are driven by superconducting linear accelerators allowing CW operation. The facility layout is chosen such that parallel operation of all sources is possible and great versatility is available to provide users with pulse repetition rates from single-shot to 1 MHz with flexible timing and the ability to combine sources.

A positron source and a UED setup are planned to complete the facility.

### Footnotes

### Funding Agency

### Paper preparation format

LaTeX

### Region represented

Europe

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