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Conclusions of the UK XFEL conceptual design and options analysis study

Monday 2 June 2025 16:00 (2 hours)

UK XFEL is a multi-stage project to pursue 'next-generation'XFEL capabilities, either through developing a new facility in the UK or by investing at existing machines. The project's Science Case envisages a step-change increase in the number of simultaneous experiments, with transform-limited ('laser-like') x-rays across a wide range of pulse durations and photon energies (up to ~20 keV) being delivered together with an array of synchronised sources, at high repetition rate to approximately ten FELs (evenly spaced pulses at approximately 100 kHz per experiment, with flexibility). Conversely, a subset of applications require increased pulse energy and higher photon energies at low repetition rate or in short bursts. The project is now in the final year of its three-year conceptual design and options analysis phase, in which it has produced a conceptual design to efficiently meet these requirements, as well as conducting an analysis of the costs, socio-economic factors, and sustainability of the different investment options. The conclusions of this study are expected to be of general interest to the community.

Footnotes

Paper preparation format

LaTeX

Region represented

Europe

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