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Accelerator design choices for a compact, electron-driven, pulsed neutron source

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Neutron scattering is an indispensable technique in material science research for providing solutions to important engineering challenges, including the ever-growing demand for more efficient batteries and fuel-cells. There are, however, limitations in the access and availability to the necessary neutron beams and this is worsening as nuclear research reactors continue to shut down. As a result, there appears to be market demand for an affordable, medium-flux, compact, accelerator-driven neutron source optimised for deployment in an industrial setting. In this paper, we present an overview of the beam specification and the high-level design choices for an electron linear accelerator that is optimised to drive such a facility.

Footnotes

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Primary author: WROE, Laurence (European Organization for Nuclear Research)

Co-authors: LATINA, Andrea (European Organization for Nuclear Research); PLEWINSKI, Francois (European Spallation Source ERIC); KHARASHVILI, George (Thomas Jefferson National Accelerator Facility); OLIVARES HERRADOR, Javier (European Organization for Nuclear Research); STAPNES, Steinar (European Organization for Nuclear Research); WUENSCH, Walter (European Organization for Nuclear Research)

Presenter: LATINA, Andrea (European Organization for Nuclear Research)

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