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Neutron production using compact linear electron accelerators

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Many reactor-based neutron sources are planned to shut down in the near future, and this is despite the increasing demand for neutron beamlines for a wide range of scientific and industrial applications. Consequently, compact accelerator-based neutron sources arise as a competitive alternative that could meet the need for medium-flux fission or spallation sources. In this work, we explore the performance of compact electron accelerators as neutron drivers and propose a preliminary target design for an X-band electron-linac-based neutron source.

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