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## Secondary beams and targets

*Tuesday 24 September 2024 12:10 (1 hour)*

This presentation outlines the methods of creating secondary beams by driving a primary beam into a target. The tungsten targets used to produce neutron beams at the ISIS pulsed spallation neutron source are described along with the graphite target used to produce muon beams. Higher power neutron targets are mentioned: liquid mercury for SNS and rotating targets for ESS. Future plans for even higher power powder targets are outlined. The use of magnetic horns to capture secondary beams from targets are described and their use at FAIR to produce antiproton beams. The extensive radiation shielding and remote handling systems required in secondary beam facilities are discussed. 'Isotope Separation On-Line (ISOL)' and 'In Flight Fragmentation' techniques for producing beams of radioactive nuclei are described and their key components outlined. Positron production at KEK is discussed, and a future proposal for a Higgs Factory mentioned.

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