

Radiation Simulation and Beam Dump design for High Energy Electrons at the Australian Synchrotron

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To support growing interest of the use of high energy electrons (40-200 MeV) for detector and medical therapy investigations, we are developing an electron extraction line at the end of the Australian Synchrotron's 100 MeV linear accelerator. While it is within a shielded area, it is desirable to reduce as much as possible the scattered radiation from the beam dump. We have investigated the use of different materials to reduce backscatter through the use of FLUKA modelling and direct measurements and found the addition of Low Z material to the front of the beam dump gives significantly reduced neutron backscatter. Ideas for how this can be implemented in other areas will also be discussed.

Primary authors: TAN, Eugene (Australian Synchrotron); DOWD, Rohan (Australian Synchrotron); ZHU, David (Australian Synchrotron)

Presenter: TAN, Eugene (Australian Synchrotron)

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