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Proton beam irradiation facility plan at J-PARC and activity on displacement damage study

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On 2024, J-PARC achieved the goal of high-power beam operation of 1 MW for the spallation neutron source. The allowable beam power can be said to be determined by the beam intercept materials for the high-power accelerator. J-PARC plans to build a Proton Beam Irradiation facility using 400 MeV protons to study materials, especially beam intercept ones used for the high-intensity proton beam. This facility will be used for a multi-purpose purpose, not only for material damage induced by radiation but also for single-event effects (SEEs) studies of semiconductor devices using proton and neutron for space and terrestrial usage and medical RI production. Also, the activity of displacement damage study, in terms of studying displacement cross-section, will be presented.

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