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Accelerator-based neutrino program in Japan

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T2K (Tokai-to-Kamioka) is a long-baseline neutrino oscillation experiment. An intense neutrino beam generated by J-PARC MR (Main Ring synchrotron) in the Tokai village on the East coast of Japan is sent to a water Cherenkov detector, Super-Kamiokande, which is located 295 km west from Tokai. The MR delivers 460 kW proton beam to the T2K experiment. In near future, a repetition time of the MR will be shortened from the present 2.48 s to less than 1.3 s by replacing main magnet power supplies. After the upgrade, beam intensity will be increased gradually toward 1.3 MW for T2K, T2K-II and also for the next generation Hyper-Kamiokande project. In a long term, construction of new booster ring for increasing injection energy of MR is planned to realize a beam intensity larger than 3 MW. A new proton driver based on superconducting linac, which will utilize existing infrastructures in the Tsukuba campus of KEK, is also under discussion as a future multi-MW beam facility.