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A PULSING SYSTEM FOR HEAVY ION TANDEMS

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Résumé. — On décrit le système de pulsation destiné à être installé à l'accélérateur NEC 20 MV de l'Institut de Recherche de l'Énergie Atomique du Japon.

Abstract. — The pulsing system for the Japanese Atomic Energy Research Institute 20 MV NEC tandem accelerator.

A pulsing system is described that will be installed in the Japanese Atomic Energy Research Institute 20 MV tandem accelerator supplied by National Electrostatics Corporation. Particles entering the system at energies between 200 keV and 350 keV are chopped by a system of novel design which uses the two frequencies of 4 MHz and 8 MHz to produce beam pulses of ~ 20 ns duration and low energy spread. For heavy particles the chopping prior to bunching is achieved using a push/pull multiple plate deflector having twelve plates. Each plate is equipped

with Rose shims to maximize the field uniformity and allow minimum capacitance. ± 250 volt pulses are applied through a special transformer sequentially to the individual plate pairs to match the velocity of the beam particles. Two bunchers are used, one for light ions up to mass 60 and the second, within the pressure vessel, for masses between 40 and 240. For 20 MeV protons the bunched pulses are expected to have FWHM less than 0.8 ns. For iodine the in-tank heavy ion buncher is expected to produce pulses with a FWHM of less than 2.5 ns.