

NuFact'11 XIIIth Workshop on Neutrino Factories, Superbeams and Beta-beams



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Neutrino Factory Front End and Extensions

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The (International Design Report) IDR neutrino factory scenario for capture, bunching, phase-energy rotation and initial cooling of mu's produced from a proton source target is presented. It requires a drift section from the target, a bunching section and a phase-energy rotation section leading into the cooling channel. The rf frequency changes along the bunching and rotation transport in order to form the mu's into a train of equal-energy bunches suitable for cooling and acceleration. Optimization and variations are discussed. Important concerns are rf limitations and beam losses; mitigation procedures are described. Extensions of the method for a muon collider front end and bunch combiner are discussed.

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