ID de Contribution: **778** Type: **Parallel session talk**

Beta Beams

samedi 23 juillet 2011 12:30 (15 minutes)

The recent discovery of neutrino oscillations, has implications for the Standard Model of particle physics (SM). Knowing the contribution of neutrinos to the SM, needs precise measurements of the parameters governing the neutrino oscillations. The EUROν Design Study will review three facilities (the so-called Super-Beams, Beta Beams and Neutrino Factories) and perform a cost assessment that, coupled with the physics performance, will give means to the European research authorities to make a decision on future European neutrino oscillation facility. "Beta Beams" produce collimated pure electron (anti-)neutrino by accelerating beta active ions to high energies and having them decay in a storage ring. EUROν Beta Beams are based on CERN's infrastructure and existing machines. Using existing machines is an advantage for the cost evaluation, however, this choice is also constraining the Beta Beams. After a brief introduction to beta beams, recent work to make the Beta Beam facility a solid option will be described: tuning of beta beam parameters to give high fluxes and to enhance the physics reach, production of Beta Beam isotopes, the 60 GHz pulsed ECR source development, integration into the LHC-upgrades, ensure the high intensity ion beam stability.

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Classification de Session: Neutrino Physics

Classification de thématique: Neutrino Physics