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EUROPEAN STRATEGY FOR ACCELERATOR BASED NEUTRINO PHYSICS

Massive neutrinos reveal physics beyond the Standard Model, which could have deep consequences for our understanding of the Universe. Their study should therefore receive the highest level of priority in the European Strategy. Among the many neutrino questions that experiments in different physics domains can answer, the discovery and study of leptonic CP violation and precision studies of the transitions between neutrino flavours require high intensity, high precision, long baseline accelerator neutrino experiments. The community of European neutrino physicists involved in oscillation experiments works on ongoing accelerator based experiments from CERN (CNGS), but also in Japan (T2K), the USA (MINOS), using reactors (Double Chooz) or natural sources (ANTARES, ICECUBE, km³, LVD) and has taken a leading role in detector and accelerator studies towards powerful future long baseline facilities. It is strong enough to support a major neutrino long baseline project in Europe, and has an ambitious, competitive and coherent vision to propose.

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