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A High Intensity Frontier Initiative (HIFI) to design a nuSTORM facility and a Neutrino Factory based on the ESSnuSB facility

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When the 5 MW, 2.5 GeV, 1.3 ms proton pulses hit the ESSnuSB neutrino target there will be a copious production of not only neutrinos but also of muons. These muons could be used for precise neutrino cross-section measurements and sterile neutrino searches in a low energy nuSTORM facility and for high precision PMNS parameter measurements in a Neutrino Factory. An overview will be given of the design work that will be required to evaluate the technical challenges, the physics performances and the implementations of a nuSTORM facility and a Neutrino factory as possible future projects on the ESS site.

Collaboration name

ESSnuSB/HIFI Collaboration

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