cost EUROPEAN COOPERATION IN SCIENCE AND TECHNOLOGY

ESSνSB ESS NEUTRINO SUPER BEAM

Funded by the Horizon 2020 Framework Programme of the European Union

NEUTRINO 2018 Heidelberg 4–9 June

The ESSνSB Neutrino Oscillation Design Study

CP violation at the 2nd oscillation maximum

(presented by E. Baussan and M. Dracos)

Physics Programme

- CP violation
- Mass Hierarchy
- Proton decay
- Supernova neutrinos
- Solar and atm. neutrinos

(arXiv:1309.7022)

MATTER/ANTIMATTER ASYMMETRY

- 1st osc. max.: $A = 0.30 \cdot \sin\delta_{CP}$
- 2nd osc. max.: $A = 0.75 \cdot \sin\delta_{CP}$

(see arXiv:1310.5992)

- 5 MW proton linac
- 2 GeV protons
- 14 Hz frequency
- 2.7·1023 p.o.t./year
- under construction, ready by 2023
- location: Lund, Sweden

Mton Water Cherenkov detector

Fishing on the second oscillation maximum

CPV

δ_{CP}

Proton decay

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