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Prospects of building an accelerator-based neutrino oscillation experiment in China

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China is currently seeing a rise of underground laboratories and particle accelerators on its mainland. In this talk, we discuss the prospects of building a next-generation accelerator-based neutrino oscillation experiment by utilizing the laboratory sites that are available in China. We consider the potential candidates for the neutrino beam and detector facilities and examine their suitability to study CP violation and physics beyond the Standard Model in a neutrino oscillation experiment. As an example, we present a case study on an experimental configuration where an accelerator-based neutrino beam is produced at the injector chain of the Super Proton-Proton Collider while placing the neutrino detector in the China JinPing underground Physics Laboratory. Our findings highlight the importance of including a tau neutrino physics program in such an experiment.

Collaboration name

Primary author: VIHONEN, Sampsa (Zhongshan University)

Co-author: TANG, Jian (Sun Yat-Sen University)

Presenter: VIHONEN, Sampsa (Zhongshan University)

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