

# Topical Discussion (1)

- *When shall we expect to discover neutrino CP violation? 2030?*
- *What is the important subject to be developed from today to the discovery time?*

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# *When shall we expect to discover neutrino CP violation? 2030?*

- Before 2030 by T2K, Super-K, NOvA
  - if CP violation is large
- Around 2030 by Hyper-K
  - assuming Hyper-K starting in 2027
- Around 2035 by DUNE and Hyper-K
  - assuming DUNE starting in 2031
- Other comment

# *When shall we expect to discover neutrino CP violation? 2030?*

## **What limits the discovery**

- Integrated neutrino beam flux
- Construction time of the new larger detector (Hyper-K and DUNE)
- Difficulty of analysis
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# *What is the important subject to be developed from today to the discovery time?*

- Statistics
  - Neutrino beam flux with the accelerator beam power
    - A new beam monitor
  - Detector size and analysis technique to expand the fiducial volume
- Systematic
  - Uncertainty of neutrino flux
  - Uncertainty of neutrino interactions
    - How do we know electron neutrino cross sections
  - Uncertainty of detector with event reconstruction
- Theoretical inputs