

Scientific concerns about the 2300 km baseline

- The close detector must be built 250 m deep, 800 m from the target (decay tunnel is 300 m), severely constraining its design. No way to push down systematic errors
- Uncertainties in the matter density introduce an additional systematic error that potentially washes out CP sensitivity (i.e. 10% error on matter density changes the 3σ coverage of a 20 kton detector from 30% to 0%)
- ν_τ events are a severe background to the second oscillation maximum that potentially destroys its significance
- The second oscillation maximum requires extremely good control of energy reconstruction that has not been demonstrated so far
- Mass hierarchy effects are so big that either the neutrino or the antineutrino beam (depending from the hierarchy) will be almost fully suppressed. CP violation would be extracted from fits to $\sin(\delta)$ and not by $\nu-\bar{\nu}$ asymmetry. Note that even ν_μ disappearance can provide fits to $\cos(\delta)$.