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Neutrino CP violating phase from μ decay at rest

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The determination of the value of θ13, which turned out to be considerably larger than the expected, opened the way to the measurement of the CP violating phase δ in the leptonic sector. We consider the following experimental setup: a 800MeV proton beam hits a target at a single site, creating μ antineutrinos via μ decay at rest; the electron antineutrinos produced by oscillations interact via IBD in two large liquid scintillators or water Cherenkov detectors. Studying the oscillation probability at different baselines it is possible to measure δ with good precision (5-15 degree in 10 years). We present several possible locations for this experiment in east Asia, each using accelerators or detectors already planned or under construction. No degeneracy is present between δ and π-δ.

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