

Reactor CEvNS constraints improve robustness of neutrino mass ordering determination

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In neutrino oscillation physics numerous exact degeneracies exist under the name LMA-Dark which make it impossible to determine the sign of the atmospheric mass splitting in oscillation experiments.

I will discuss how new data from the Dresden-II experiment completely removes the degeneracies in the ν_e sector for mediators down to the MeV scale at which point constraints from the early universe take over. While the LMA-Dark degeneracy is lifted in the ν_e sector, it can still be restored in the ν_μ and ν_τ sector or with very specific couplings to up and down quarks, and we speculate on a path forward.

Primary authors: GEHRLEIN, Julia (CERN); Dr DENTON, Peter (Brookhaven National Laboratory)

Presenter: GEHRLEIN, Julia (CERN)

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