

Why matter effects are important for MBL experiments?

Friday 31 July 2020 10:00 (15 minutes)

We discuss perturbative expansions for the solar oscillation parameters in terms of the matter potential relevant for MBL experiments. These expansions, up to second order in the matter potential, while simple, allow one to calculate the electron antineutrino survival probability to a precision much better than needed for the JUNO experiment. We also quantitatively explain the shift caused by the matter effects on the solar neutrino mixing parameters Δm_{21}^2 and θ_{12} which do not satisfy the naïve expectations and are significant given the precision that can be achieved by the JUNO experiment.

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Secondary track (number)

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