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Hints of non-unitarity in the present T2K and NOνA data

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The mixing of three neutrino flavours is parameterised by the unitary
PMNS matrix. If there are more than three neutrino flavours, effective 3×3 neutrino mixing
matrix will be non-unitary. In this paper, we have analysed the
latest T2K and NOνA data with the hypothesis of non-unitary mixing matrix.
Present results from NOνA and T2K collaboration have tension between them as NOνA disfavours T2K
best-fit point at $1\,\sigma$ confidence level and vice versa. In this paper we have shown that latest data from both
the
experiments disfavour unitary 3×3 mixing at 60% C.L. The combined analysis disfavours unitary mixing
at $1\,\sigma$ C.L. Moreover, the tension between two experiments can also be reduced with the non-unitary approach.

Primary authors: RAHAMAN, Ushak (University of Johannesburg); Dr MIRANDA, Luis Salvador (University of Johannesburg); Dr PASQUINI, Pedro (Instituto de F\'i sica Te\'orica–Universidade Estadual Paulista (UNESP)\\ R. Dr. Bento Teobaldo Ferraz 271, Barra Funda\\ S\~ao Paulo - SP, 01140-070, Brazil, Instituto de F\'isica Gleb Wataghin - UNICAMP, 13083-859, Campinas SP, Brazi); Prof. RAZZAQUE, Soebur (University of Johannesburg)

Presenter: RAHAMAN, Ushak (University of Johannesburg)

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