

## Neutrino mixing matrices with prescribed singular values

### Authorship annotation

### Session and Location

Wednesday Session, Poster Wall #144 (Hölderlin-Room)

### Abstract content

The Standard Model is based on three neutrino flavours where neutrinos mix by unitary matrix PMNS. However, there can exist additional number of neutrinos hidden within our mathematical and experimental benightedness. We propose an independent analysis of neutrino mixing data based on interval matrices.

Methods of matrix analysis show that the set of physically admissible mixing matrices are classified as contractions lying within the convex hull of the experimentally determined PMNS matrices. Moreover, it appears that the number of additional neutrinos is controlled by the singular values of mixing matrices. In this way the method can be used to test the Standard Model as well as its extensions.

This work presents the procedure of construction of 3-dimensional mixing matrices as contractions with prescribed number of additional neutrinos that agree with experimental measurements. Further these matrices can be extended to assumed dimension via the procedure of the unitary dilation.

### Poster included in proceedings:

yes

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