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## Spontaneous mu-tau symmetry breaking in neutrino phenomenology

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Current neutrino oscillation data tell us that what is behind the observed neutrino mixing pattern should at least be an approximate mu-tau flavor symmetry. This suggests that there may exist an exact mu-tau flavor symmetry in the neutrino sector at a superhigh energy scale (e.g., the scale that the seesaw mechanism works), and it will be spontaneously broken due to the renormalization-group evolution down to the electroweak scale. We shall report our latest studies in this respect, and establish the connection between mu-tau symmetry breaking and the octant of  $\theta_{23}$  and the quadrant of  $\delta$  in the standard parametrization of the PMNS matrix. We find that current experimental data can be interpreted in this way. Some model-building issues will also be addressed.

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