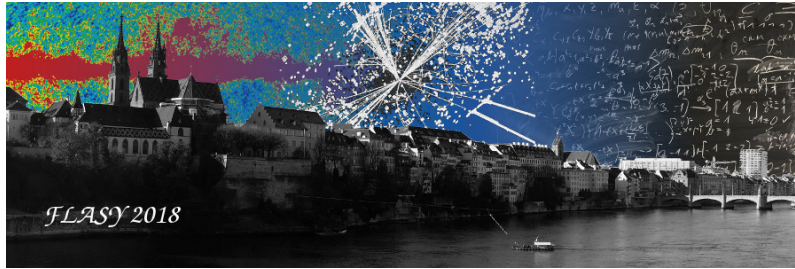


FLASY 2018: 7th Workshop on Flavour Symmetries and Consequences in Accelerators and Cosmology



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Assessing the Viability of A_4 , S_4 and A_5 Flavour Symmetries for Description of Neutrino Mixing

Thursday 5 July 2018 11:30 (30 minutes)

We consider the A_4 , S_4 and A_5 discrete lepton flavour symmetries in the case of 3-neutrino mixing, broken down to non-trivial residual symmetries in the charged lepton and neutrino sectors in such a way that at least one of them is a Z_2 . Such symmetry breaking patterns lead to predictions for some of the three neutrino mixing angles and/or the leptonic Dirac CP violation phase δ of the neutrino mixing matrix. We assess the viability of these predictions by performing a statistical analysis which uses as an input the latest global data on the neutrino mixing parameters. We find 14 phenomenologically viable cases providing distinct predictions for some of the mixing angles and/or the Dirac phase δ . Employing the current best fit values of the three neutrino mixing angles, we perform a statistical analysis of these cases taking into account the prospective uncertainties in the determination of the mixing angles, planned to be achieved in currently running (Daya Bay) and the next generation (JUNO, T2HK, DUNE) of neutrino oscillation experiments. We find that only six cases would be compatible with these prospective data. We show that this number is likely to be further reduced by a precision measurement of δ .

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