



Wednesday 6 July, 15:10 – 15:30

Session 11: Theory of neutrino mass, mixing, CP-invariance violation and leptogenesis

High energy see-saw models, GUTs and Leptogenesis

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In this talk I will discuss different classes of models, in particular $SO(10)$ -inspired models and discrete flavour symmetries models, embedding the see-saw mechanism and based on some minimal assumptions that contribute to over-constrain the parameters space in combination with low energy neutrino data and leptogenesis. I will discuss different solutions and predictions highlighting the current difficulty to have fits to all parameters within realistic models that do not suffer of a certain amount of fine-tuning. I will also present two alternative strategies based on cosmological considerations: one is the so called 'strong thermal leptogenesis condition' (independence of the initial conditions) and another one is to include also Dark Matter into the game also obtaining prediction in the high energy neutrino flux detected by IceCube.