Contribution ID: **35** Type: **Parallel Session talk**

Flavoured scalar triplet leptogenesis

Wednesday 28 May 2014 15:30 (20 minutes)

I present a generic approach of leptogenesis through the decay of a scalar triplet that also contributes to nonzero neutrino masses through the type II seesaw. It is known that a single scalar triplet is insufficient to generate the baryon asymmetry of the universe, so that other particles are needed. Assuming that these supplementary particles are heavy enough, their effect can be encoded in an effective dimension-5 operator that gives another contribution to neutrino masses. I show that, contrary to the minimal leptogenesis scenario involving right-handed neutrinos, flavor effects can be relevant even in the high-temperature regime where lepton flavours are undistinguishable. In this regime, the correct treatment should involve a 3×3 density matrix describing the asymmetries stored in the different flavours as well as the quantum correlations. I derive the evolution equation for this density matrix and solve numerically the set of Boltzmann equations for different values of the parameters and computed the predicted baryon asymmetry of the universe.

Author: SCHMAUCH, Benoit (I)

Presenter: SCHMAUCH, Benoit (I)

Session Classification: Leptogenesis

Track Classification: Flavor Physics and Neutrinos