NuCo 2021: Neutrinos en Colombia



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A prototype model for quasi-Dirac neutrinos

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In this talk, we will discuss a prototype model for quasi-Dirac neutrinos. Light neutrino mass is still explained by a seesaw mechanism involving new heavy fermion degrees of freedom (heavy neutrinos). In the limit of lepton number conservation (at the Lagrangian level), we have the Dirac seesaw mechanism. Once small lepton number violation is introduced, both light and heavy neutrinos will respectively be split into quasi-Dirac pairs. While the mass splitting is a priori a free parameter (depending on the lepton number violating parameters in the theory), once one impose the condition of successful low scale (sub TeV) leptogenesis, intriguingly, the mass splitting for light neutrinos falls in the regime testable in neutrino oscillation experiments.

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