Contribution ID: **34** Type: **Working Group Sessions**

Deviations of symmetry-based exact neutrino structures using radiative neutrino masses.

Wednesday, 21 June 2017 15:10 (20 minutes)

Five years ago, results from the Daya Bay and RENO experiments found a non-zero θ13. The discovery of this non-zero value disfavoured the possibility of symmetry-based exact structures, such as tribimaximal, democratic, etc. The most common technique to accomplish a neutrino mixing matrix that contains experimentally allowed parameters is to start with one of these symmetry-based structures and apply a perturbation. These perturbations are commonly accomplished by adding new scalars to the model. After symmetry breaking, new terms exist in the mass matrix that accomplish the modification of the original structure. In this sense, these are not really perturbations but mass contributions that exist in the model itself.
In this work, we will present an alternative: By using the Weinberg operator, we create radiative neutrino scenarios. We show that one can consider the one-loop contribution to be the unperturbed mass that can create an exact mixing structure and the two-loop contribution (that is naturally suppressed) can be considered a perturbation to the mass matrix that creates deviations that reproduce experimental constrains.

Primary author: Dr WEGMAN, Daniel (ULg)

Presenter: Dr WEGMAN, Daniel (ULg)

Session Classification: Working Group: Neutrino Physics

Track Classification: Neutrino Physics Working Group