



Contribution ID: 71

Type: **Oral Presentation**

## **Revisiting Neutrino Oscillation Probabilities in Matter ( $15' + 2'$ )**

*Saturday, 6 August 2016 16:15 (17 minutes)*

Recently significant progress has been made in the analytic understand of neutrino oscillation probabilities in matter, see arXiv:1505.01826. This work has recently been further extended to large L/E regions and gives the exact probability in vacuum, this new perturbation theory is numerically very accurate and the expressions for the oscillation probabilities is remarkable compact. These oscillation probabilities are applicable to all current and further experiments, T2K, NOvA, DUNE etc and the form allows an enhanced level of analytic understand for these oscillation probabilities. By the time of the ICHEP conference we expect to have 2 or more additional papers on this subject as these methods can also be extended into the sterile neutrino sector.

**Primary author:** DENTON, Peter (Vanderbilt U and Fermilab)

**Co-author:** PARKE, Stephen (Fermi National Accelerator Lab. (US))

**Presenter:** DENTON, Peter (Vanderbilt U and Fermilab)

**Session Classification:** Neutrino Physics

**Track Classification:** Neutrino Physics