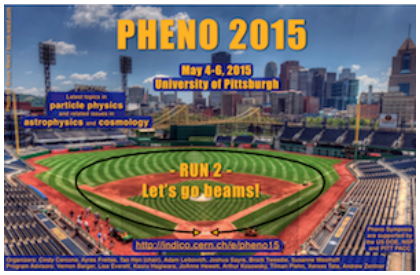


Contribution ID: **108** Type: **parallel talk**

# Dynamical Pion Collapse and the Coherence of Neutrino Beams

*Tuesday 5 May 2015 14:00 (15 minutes)*

This talk will cover progress towards understanding the coherence properties of neutrino beams, using an open-quantum-systems approach to neutrino production. A new derivation of the generalized neutrino oscillation probability from arbitrarily prepared pions will be presented, followed by a calculation of the pion state that evolves through electromagnetic interactions with decay pipe gases. From these two ingredients, the full oscillation phenomenology of accelerator neutrino beams is derived without arbitrary scales or initial-state assumptions.

**Author:** JONES, Benjamin (MIT)

**Presenters:** JONES, Benjamin (MIT); JONES, Benjamin (H. H. Wills Physics Laboratory-University of Bristol-Unknown)

**Session Classification:** Neutrinos