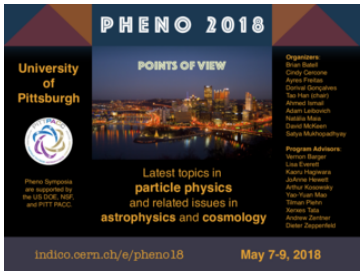

Contribution ID: **474** Type: **parallel talk**

Study atmospheric neutrinos for the DSNB detection in Super-Kamiokande and SK-Gd

Tuesday 8 May 2018 15:45 (15 minutes)

Detection of the diffuse supernova neutrino background (DSNB) is of great importance, which will greatly help the understanding of both core-collapse (including supernova) physics and neutrino physics. However, after tens of years' effort of Super-Kamiokande (SK), DSNB is still hidden in the remaining backgrounds, dominated by atmospheric neutrinos.
In this work we study the underlying physics of the atmospheric neutrino interactions in SK and propose new detection methods for DSNB detection, for both current SK and future SK-Gd, which has the neutron-tagging ability. These methods, if adopted by SK, will greatly improve the detectability of DSNB.

Summary

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Session Classification: Neutrinos II