UK-APP & OWAN'25 conferences
2nd - 3rd June 2025

Contribution ID: **14**   Type: **not specified**

Updating the Bartol Atmospheric Neutrino Flux Model

The Bartol model of atmospheric neutrino fluxes has undergone several significant updates since the last published results in the mid 2000s.

Around 2022, there was significant work done on implementing a hadron production data tuning scheme for the Bartol model. The available hadron production datasets were able to achieve a good coverage of the kinematic phase space. The post-tuning flux saw a significant decrease in the atmospheric neutrino flux uncertainties.

More recently, the code base of the Bartol Monte Carlo simulation has been audited and rewritten in C++, with the physics analysis code under development. I will present the current status of the Bartol model. our plans to modernise the flux predictions, and the prospects for a new version to be available in the not-too-distant future.

Authors: BARR, Giles (Oxford University); COOK, Laurence (TRIUMF); YANG, Yiwen

Presenter: YANG, Yiwen

Session Classification: OWAN 25