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Uncertainty Estimates for Atmospheric Neutrino Fluxes

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Abstract content

Starting from a survey of experimental measurements, we assign uncertainties to the two most critical inputs to the calculation of fluxes of unoscillated atmospheric neutrinos, the hadron production and the primary cosmic ray fluxes. We then propagate these uncertainties through the entire flux calculation to arrive at estimates of the uncertainties in the fluxes of neutrinos and of various ratios of neutrino fluxes. We find that there is indeed a significant cancellation of flux uncertainties when these ratios are made. The uncertainties as a function of neutrino energy will be presented.

If this paper is presented for a collaboration, please specify the collaboration

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 5 (HE part 2), pages 1495-1498

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