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Fluorescence Yield Results of FLASH (SLAC-E165)

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Abstract content

The yield of fluorescence photons in an extensive air shower allows the observer to determine the number of shower particles by measuring the number of photons produced. As the systematic uncertainties in both ground array and fluorescence detectors improve our need to better understand this calibration is required. Additionally, as more sensitive fluorescence detectors observe further into the atmosphere, our understanding of the spectral distribution of the yield is required in order to properly handle the λ^{-4} effect of Rayleigh scattering.

In the first phase of SLAC's experiment E-165, "Fluorescence in Air from Showers/FLASH", a 28.5 GeV beam of electrons was used to measure the total yield (photons per charged particle per meter) between 300 and 400 nm as well as the spectral distribution of the light. Our objective was to make this measurement to better than 10% total uncertainty and the calibration efforts required to achieve this will be outlined with details presented in the poster session.

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

FLASH (SLAC E-165)

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olive, 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 1171-1174

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