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**Seasonal Variations of the Atmospheric Muon Flux in IceCube**  
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The IceCube Observatory is a km<sup>3</sup> neutrino telescope under construction in the deep ice at the Geographic South Pole. Once fully deployed, it will consist of 4800 optical sensors tethered to 80 vertical strings to detect Cherenkov radiation from charged leptons. The data that IceCube is currently collecting is mostly triggered by muon bundles from air showers produced by the interaction of cosmic rays in the Earth's atmosphere. Muon production rate is sensitive to the atmospheric density profile, which is affected by the seasonal variations of temperature and pressure throughout the year. These variations, consequently induce a yearly modulation in the muon rate of about 20%, as well as varying sensitively with temperature over shorter spans of a few days. The data collected by IceCube was analyzed and a strong day-to-day correlation with the measured temperature across the antarctic atmosphere was observed, and the corresponding temperature coefficient  $\alpha_T = \left(\frac{T}{N_\mu}\right) \cdot \left(\frac{dN_\mu}{dT}\right) = 0.8908 \pm 0.0092$ .

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