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## Atmospheric- Weighted Temperature and its influence on Cosmic Ray muons

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To study the dependence of the muon rate flux on temperature we need to have some measure of atmospheric temperature above the detection site. Atmospheric weighted temperature, known also as the effective temperature, is defined as the temperature of an isothermic atmosphere that reflects the temperature of the real atmosphere with its varying conditions. In this paper, the influence of the atmospheric temperature on the observed muon flux was investigated and the obtained results were discussed. Cosmic ray data were obtained from KACST muon detector, which was in operation since 2002, located at Riyadh, Saudi Arabia, ( $R_c$  is  $\sim 14$  GV). Corresponding Radiosonde data were used to calculate the Atmospheric weighted temperatures for different atmospheric heights.

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