

## Time variation of correction coefficients for atmospheric effects on cosmic ray count rate

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We performed a network analysis with neutron monitor and the Global Muon Detector Network (GMDN) data to analyze two long-lasting cosmic ray intensity decreases accompanied by strong anisotropy in January-February and July in 2012 (Hayashi et al. 2023). However, the results of the amplitude of anisotropy showed a significant 24-hour variation which may be due to the “local effect”. About the spurious anisotropy, the method for analytically avoiding the “local effect” that causes it was discussed by Munakata et al. (2023). Correcting for atmospheric effect (pressure and temperature) is essential for ground-based muon measurements. Since the “local effect” may be related to the correction for the atmospheric effects, in this study we investigate the coefficients used for the atmospheric effect correction. The results show that the atmospheric correction coefficients are time-varying and vary in relation to the solar cycle. In this talk, we report on the possibility that time-varying coefficients may be a cause of the spurious anisotropy.

### References

Y. Hayashi et al., PoS(ICRC2023)1267, DOI <https://doi.org/10.22323/1.444.1267>

K. Munakata et al., PoS(ICRC2023)1228, DOI <https://doi.org/10.22323/1.444.1228>