

Erratum to: New cosmic ray observations at Syowa Station in the Antarctic for space weather study

Chihiro Kato^{1,*}, Wataru Kihara¹, Yukino Ko¹, Akira Kadokura^{2,3,6}, Ryuho Kataoka^{2,6}, Paul Evenson⁴, Satoru Uchida¹, So Kaimi¹, Yoshiaki Nakamura⁵, Herbert Akihito Uchida^{2,6}, Kiyoka Murase⁶, and Kazuoki Munakata¹

¹ Department of Physics, Faculty of Science, Shinshu University, Matsumoto, 390-8621 Nagano, Japan

² National Institute of Polar Research (NIPR), Tachikawa, 190-8518 Tokyo, Japan

³ Polar Environment Data Science Center, Joint Support-Center for Data Science Research, Research Organization of Information and Systems, Tachikawa, 105-0001 Tokyo, Japan

⁴ Bartol Research Institute, Department of Physics and Astronomy, University of Delaware, Newark, 19716 DE, USA

⁵ Key Laboratory of Particle Astrophysics, Institute of High Energy Physics, Chinese Academy of Sciences, 100049 Beijing, PR China

⁶ Department of Polar Science, The Graduate University for Advanced Studies, 240-0193 Sokendai, Japan

Accepted 2 July 2021

J. Space Weather Space Clim., **11** (2021) 31, DOI: <https://doi.org/10.1051/swsc/2021005>

Abstract—Due to confusion in the proof correction process, the author’s proof corrections were not correctly taken into account. The corrections are listed below, highlighted by a boldface font.

Keywords: Cosmic ray / Muon detector / Neutron monitor

In the abstract, last sentence, as well as in footnote 5, page 4, and in the acknowledgements, the link “<http://polaris.nipr.ac.jp/cosmicrays/>” is missing a “~” sign and should read: <http://polaris.nipr.ac.jp/~cosmicrays/>

Figure 9, page 7, numerical values in the graphic read “ $y = -0.290x - 0.1737$ ” and “ $R^2 = 0.94$ ” where it should have read “ $y = -\mathbf{0.290}x - \mathbf{0.174}$ ” and “ $\mathbf{R^2 = 0.94}$ ” as on the following figure.

Figure 9’s caption, last sentence, the value of the correction coefficient α_{MSS} was wrongly written “0.289” instead of “0.290”.

This correction should have also been added at page 7, penultimate paragraph, last sentence:

“The correction coefficient α_{MSS} is calculated to be $-\mathbf{0.290} \pm 0.004$ (%/K) with the correlation coefficient of 0.94.”

Table 1, page 5 is missing a column:

Page 8, penultimate paragraph, the sentence:

“After the SSW, SYO_MD_V varies in correlation with ΔT_{MSS} both above and below the 200 hPa altitude, showing a typical seasonal variation.”

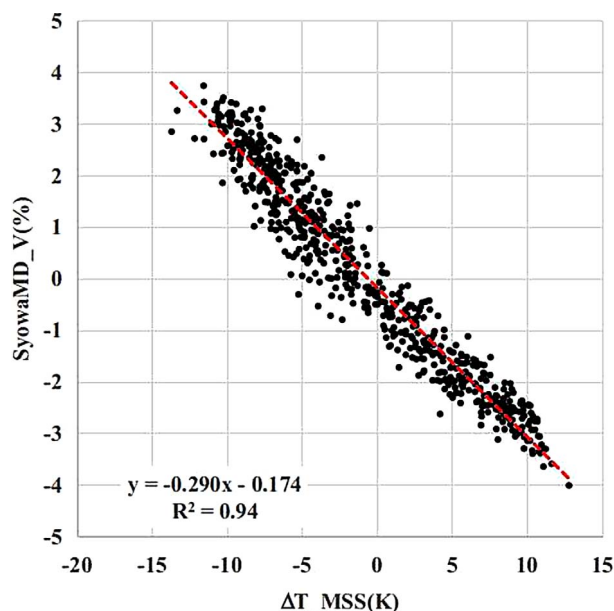


Fig. 9. A scatter plot between ΔT_{MSS} and the pressure corrected daily mean count rate in Syowa MD vertical channel (SYO_MD_V). The derived regression coefficient (α_{MSS}) is $-\mathbf{0.290} \pm 0.004$ (%/K) and the correlation coefficient is 0.94.

*Corresponding author: ckato@shinshu-u.ac.jp

Table 1. Characteristics of Syowa NM and MD. P_c of NM is calculated for vertical direction.

Directional channel	Cutoff rigidity P_c (GV)	Median rigidity P_m (GV)	Asymptotic directions @ P_m	Correction coefficient β (%/hPa)	Average count rate $\times 10^4$ (counts/hr)	Average Barometric Pressure [hPa]
Syowa NM Omni	0.4	16.3	30°S38° E	-0.76	31.8 (total)	982
Syowa MD V		53.6	56°S53° E	-0.16	26.9	
N		58.5	29°S35° E	-0.16	3.8	
S		58.5	70°S115° E	-0.16	3.8	
E		58.5	32°S81° E	-0.16	6.4	
W		58.5	60°S8° W	-0.16	6.4	
NE		63.6	16°S60° E	-0.15	1.0	
NW		63.6	34°S4° E	-0.16	1.0	
SE		63.6	42°S110° E	-0.16	1.0	
SW		63.6	80°S77° W	-0.16	1.0	

Should read:

“After the SSW, SYO_MD_V varies in **anti-correlation** with ΔT_{MSS} both above and below the 200 hPa altitude, showing a typical seasonal variation.

Page 9, caption of Figure 13, the sentence “ ΔT_{MSS} (calculated with Eq. (3)) is shown by blue solid circles on the right vertical axis using an inverted scale.” should read instead:

“ ΔT_{MSS} (calculated with Eq. (3)) is shown by blue solid **triangles** on the right vertical axis using an inverted scale.

Page 11, in the acknowledgements, the Institute for Cosmic Ray Research is missing in the second sentence:

This research project is supported by NIPR, ISEE (Institute for Space-Earth Environmental Research), **ICRR (Institute for Cosmic Ray Research)**, University of Delaware, and Shinshu University.

Page 11, reference [Chen et al. \(2019\)](#) had an incomplete page range:

Chen C, Liu YD, Wang R, Zhao X, Hu H, Zhu B. 2019. Characteristics of a gradual filament eruption and subsequent CME propagation in relation to a strong geomagnetic storm. *Astrophys J* **884**: 90-99. <https://doi.org/10.3847/15384357/ab3f36>.

References

Chen C, Liu YD, Wang R, Zhao X, Hu H, Zhu B. 2019. Characteristics of a gradual filament eruption and subsequent CME propagation in relation to a strong geomagnetic storm. *Astrophys J* **884**: 90–99. <https://doi.org/10.3847/15384357/ab3f36>.

Cite this article as: Kato C, Kihara W, Ko Y, Kadokura A, Kataoka R, et al. 2021. Erratum to: New cosmic ray observations at Syowa Station in the Antarctic for space weather study. *J. Space Weather Space Clim.* **11**, 45. <https://doi.org/10.1051/swsc/2021028>.