

ERRATUM

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# Erratum to: The spatial density gradient of galactic cosmic rays and its solar cycle variation observed with the Global Muon Detector Network

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## Erratum to: *Earth, Planets and Space* 2014, 66:151 DOI 10.1186/s40623-014-0151-5

Equation (4) in the original paper (Kozai et al. 2014) was incorrect and needs to be multiplied by a factor 2, as

$$\xi_z^{\text{GEO}} = c \cdot \frac{R}{R^T + R^A}. \quad (4)$$

Figure 2e and the column “NMs” of Table 1 in the paper which were calculated from Eq. (4) in the paper also need to be corrected. The corrected Fig. 2 and Table 1 are shown below. According to these corrections, a few sentences in the paper need to be reworded as follows. It is noted that all conclusions are not subject to these corrections.

- Page 6, left column, Line 5  
“mainly due to the small  $T - A$ , i.e., the NS anisotropy is significantly smaller than that obtained from the GMDN and GG-component.”

should be reworded as:

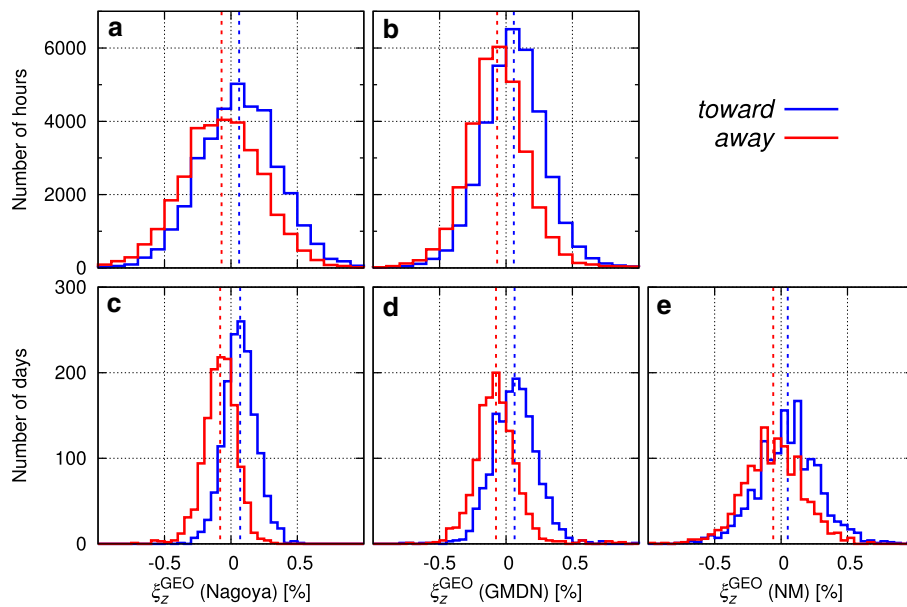
“due to the large  $\sqrt{\sigma_T \sigma_A}$  and the small  $T - A$ , indicating that the NS anisotropy is smaller than that obtained from the GMDN and GG-component.”

- Page 7, right column, Line 14  
“If these are the case, the magnitude of the NS anisotropy increases with rigidity and the  $T/A$  separation and success rate will also increase if the dispersion remains similarly independent of rigidity. This is in agreement with our results in Table 1, showing that  $T - A$  increases with the rigidity while  $\sqrt{\sigma_T \sigma_A}$  is almost constant on a daily basis.”  
should be reworded as:  
“This is in an agreement with our results in Table 1, showing that  $T - A$  increases with the rigidity.”

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**Fig. 2** Histograms of the NS anisotropy. Each panel displays the histograms of  $\xi_z^{\text{GEO}}$  on hourly (a, b) and daily (c, d, e) bases derived from the Nagoya GG-component (a, c), the GMDN (b, d), and NM (Thule–McMurdo) (e) data in 2006–2013. Blue and red histograms in each panel represent distributions of  $\xi_z^{\text{GEO}}$  in toward and away IMF sectors, respectively, while blue and red vertical dashed lines represent averages of the blue and red histograms, respectively

**Table 1**  $T - A$ ,  $\sqrt{\sigma_T \sigma_A}$ ,  $T / A$  separation, and success rate

	Nagoya GG	GMDN	NMs
$T - A$ (%)			
Daily	0.1504	0.1398	0.1090
Hourly	0.1324	0.1258	–
$\sqrt{\sigma_T \sigma_A}$ (%)			
Daily	0.0033	0.0044	0.0062
Hourly	0.0016	0.0013	–
$T / A$ separation			
Daily	46.2	31.5	17.8
Hourly	81.2	96.6	–
Success rate (%)			
Daily	73.5	68.7	59.6
Hourly	58.2	62.0	–

Difference ( $T - A$ ) between average  $\xi_z^{\text{GEO}}$ s in toward ( $T$ ) and away ( $A$ ) IMF sectors, geometric mean ( $\sqrt{\sigma_T \sigma_A}$ ) of the standard errors of  $\xi_z^{\text{GEO}}$ s in  $T$  and  $A$  sectors, " $T / A$  separation" ( $= (T - A) / \sqrt{\sigma_T \sigma_A}$ ) and "success rate" (see text) derived from Nagoya GG-component, GMDN, and NM (Thule–McMurdo) data in 2006–2013 on daily and hourly bases

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