# CORRECTION Open Access



# Correction: CMT inversion for small-to-moderate earthquakes applying to dense short-period OBS array at off Ibaraki region

Lina Yamaya<sup>1,2\*</sup>, Kimihiro Mochizuki<sup>1</sup>, Takeshi Akuhara<sup>1</sup>, Shunsuke Takemura<sup>1</sup>, Masanao Shinohara<sup>1</sup>, and Tomoaki Yamada<sup>1</sup>

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Following publication of the original article (Yamaya et al. 2022), the authors reported an error in Figs. 1, 2, 6, 7 and 10.

The original article can be found online at https://doi.org/10.1186/s40623-022-01721-3.

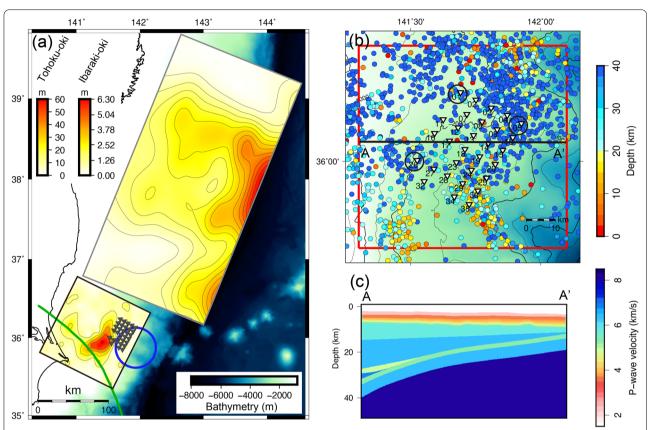
\*Correspondence: lina@bosai.go.jp

<sup>&</sup>lt;sup>1</sup> Earthquake Research Institute, The University of Tokyo, 1-1-1, Yayoi, Bunkyo-Ku, Tokyo, Japan Full list of author information is available at the end of the article



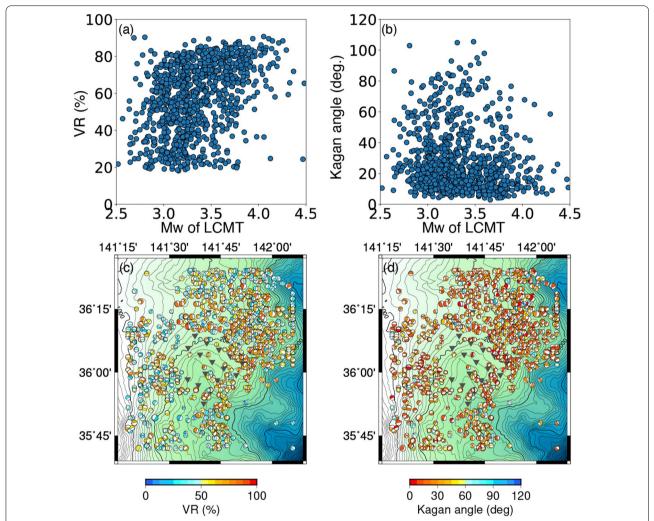
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The color of the scale bar in Fig. 1b has been faded, the correct Fig. 1 should read:



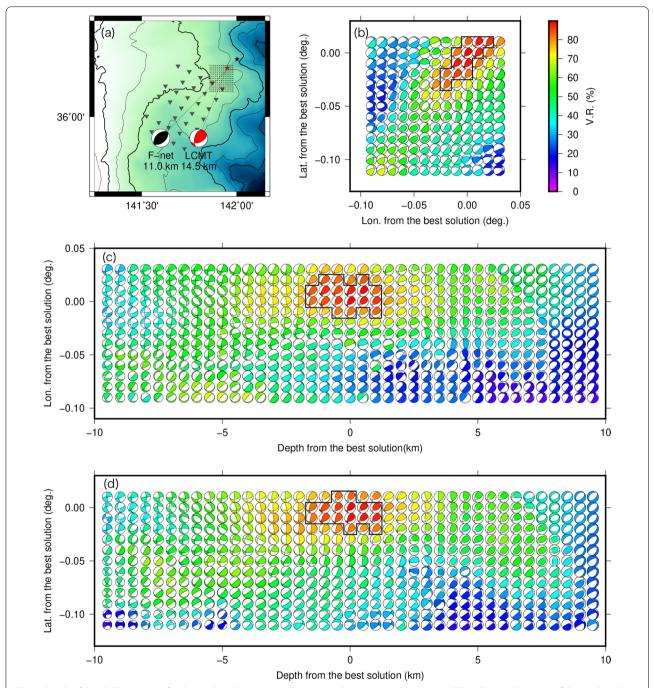
**Fig. 1** a Study area with the slip distribution of the 2011 Tohoku-oki earthquake within a grey square (Lay et al. 2011), as well as the 2011 Ibaraki-oki earthquake within a black square (Kubo et al. 2013). The grey triangles show the stations of the OBS array in the of Ibaraki region. The blue circle shows the subducting seamount (Mochizuki et al. 2008). The green line shows the northeastern limit of the Philippine Sea Plate (Uchida et al. 2010). **b** Distribution of seismicity and OBS stations. The white triangles show OBS stations. The circled white triangles show the stations which were recovered approximately 2 weeks after the 2011 Tohoku-oki earthquake occurred. The colored circles show the earthquake hypocenters determined by JMA with their color indicating their depth. The red rectangle represents the region, where the Green's functions were calculated. **c** Seismic velocity structure model along profile A–A' in **b**. The region shallower than ~ 10 km was constructed by Yamaya et al. (2021), and deeper by Koketsu et al. (2012).

The color of the scale bar in Fig. 2d has been faded, the correct Fig. 2 should read:



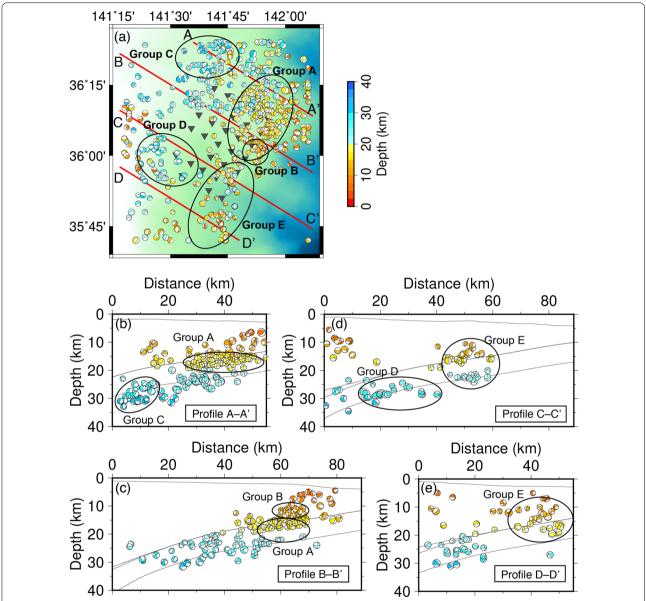
**Fig. 2** a Moment magnitudes of the obtained CMT solutions against the VRs, and **b** the 68% confidence interval of Kagan angle by bootstrap results. **c** Spatial distribution of the VRs and d of the 68% confidence interval of Kagan angle.

The color of the black focal in Fig. 3a has been faded, the correct Fig. 3 should read:



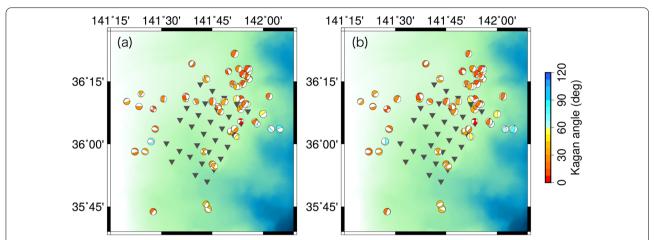
**Fig. 3** Result of the CMT inversions for the earthquake (Mw 4.0) that occurred at 9:06, March 16, 2011 (JST). **a** Centroid location of the earthquake and the OBS array. The red star shows the horizontal location of the best centroid with 14.5 km depth. The red focal mechanism shows the moment tensor of the best CMT solution. The black star indicates the horizontal location of the F-net MT solution with 11.0 km depth. The black focal mechanism shows the moment tensor of the F-net MT solution. The grey triangles show the stations of the OBS array. **b** Horizontal resolution of the CMT solution. The color of the focal mechanisms shows the VR. The region surrounded by the black line shows VR more than 90% from our best. **c** Depth resolution with longitudinal direction, and **d** with latitudinal direction

The color of the scale bar in Fig. 6a has been faded, the correct Fig. 6 should read:



**Fig. 6** a Spatial distribution of the obtained CMT solutions. The color of the focal mechanisms shows their depth. **b-e** Cross sections with the profiles of A–A', B–B', C–C', and D–D', respectively. The thin lines show the bathymetry, the upper surface and oceanic Moho of the Pacific Plate, and the upper surface of the Philippine Sea Plate (Koketsu et al. 2012).

The color of the scale bar in Fig. 7b has been faded, the correct Fig. 7 should read:



**Fig. 7** Spatial distribution of Kagan angles. The colors of the moment tensors suggest the difference in Kagan angles between F-net MT and obtained CMT solutions. **a** Kagan angles with obtained and **b** with F-net MT solutions

The color of the black focal in Fig. 10a has been faded, the correct Fig. 10 should read:

The original article (Yamaya et al. 2022) has been updated.

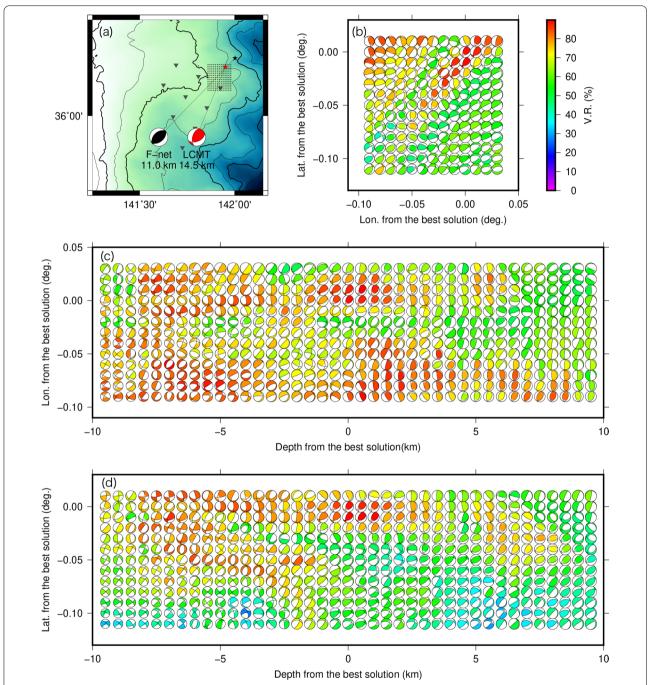


Fig. 10 Result of the CMT inversions for the earthquake that occurred at 9:06, March 16, 2011 (JST), using sparse OBS stations. Notations are the same as Fig. 3

### **Author details**

<sup>1</sup>Earthquake Research Institute, The University of Tokyo, 1-1-1, Yayoi, Bunkyo-Ku, Tokyo, Japan. <sup>2</sup>National Research Institute for Earth Science and Disaster Resilience, 3-1, Tennodai, Tsukuba, Ibaraki 305-0006, Japan.

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