Correction to "A persistent localized microseismic source near the Kyushu Island, Japan"

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[1] In the paper "A persistent localized microseismic source near the Kyushu Island, Japan" by Xiangfang Zeng and Sidao Ni (*Geophysical Research Letters*, *37*, L24307, doi:10.1029/2010GL045774) [*Zeng and Ni*, 2010], based on cross-correlations between observations of ambient seismic noise, we presented evidence for a temporally persistent localized microseismic source near Kyushu Island, Japan. Because the source's amplitude does not correlate with seasons and it appears to be located on the island of Kyushu, we proposed that it was probably non-oceanic in origin. We concluded that the source was interesting but enigmatic.

[2] After our paper was published, H. Kawakatsu (personal communication, 2011) identified the likely source of the microseismic energy as Aso volcano, Kyushu, Japan. Based on the long history of studies of Aso volcano (of which we were largely unaware) we concur with their assessment. Aso volcano, which is located near the center of Kyushu Island, is characterized by volcanic tremors with a dominant period of 3.5–8.0 sec, which have been continually observed after the first detection in the 1930s [e.g., *Sassa*, 1935; *Kubotera*, 1974]. Recent observations using broadband seismometers revealed the existence of a lower mode with 15 sec period, which may explain the peak energy we observe between periods of 8 and 14 sec, and the nature and generation mechanism of the signal have been extensively studied [e.g., *Kawakatsu et al.*, 1994; *Kaneshima et al.*, 1996; *Kawakatsu et al.*, 2000; *Legrand et al.*, 2000; *Yamamoto et al.*, 1999; *Kawakatsu and Yamamoto*, 2007].

[3] The long period tremor from Aso volcano has been well studied because of the availability of near field observations. Our study demonstrates the power of ambient noise cross-correlations to detect and locate weak but persistent signals even with a relatively sparse remote network. For example, at station SSE in eastern China, we did not observe long period tremor signals in the band of 0.07–0.12Hz (Figure 1) on August 26, 1997, a even though local observations on Kyushu Island show long period tremors clearly on this day [*Yamamoto et al.*, 1999, Figure 2a]. The long period tremor, therefore, is below noise level at such large distances, but can be detected by cross-correlating ambient seismic noise using standard methods of ambient noise data processing [e.g., *Bensen et al.*, 2007]. On the other hand, cross-correlations that exhibit the effects of persistent localized microseisms must be desensitized to these signals prior to being used for dispersion measurements as part of ambient noise tomography (e.g., Y. Zheng et al., Ambient noise tomography of northeastern China, the Korean Peninsula, and the Sea of Japan, submitted to *Journal of Geophysical Research*, 2011, in northeastern China).

[4] With the current coverage of Global Seismic Network (GSN), cross-correlations between long time series can be used to detect weak signals (signal noise level less than 1) generated by sources of known origin (such as identified volcanoes) or unknown sources (such as unidentified-submarine volcanoes or dyke activities) such as the observation of the 26 sec microseism by *Shapiro et al.* [2006]. Of course, near field geophysical observations, if available, would provide better information for monitoring various processes associated with the volcanic system [*Yamamoto et al.*, 2007].

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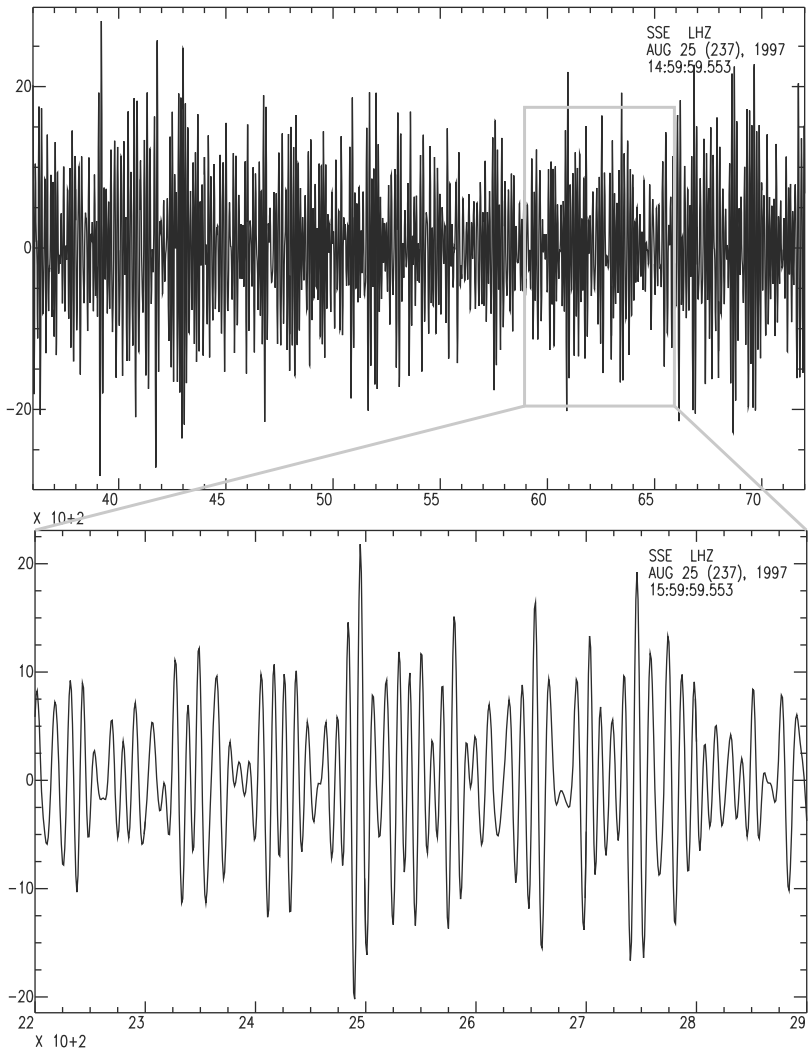

Figure 1. The vertical velocity seismogram at GSN station SSE on August 26, 1997 (JST, which is same as *Yamamoto et al.* [1999, Figure 2a]). Waveform data is bandpass-filtered between 0.03 and 0.1 Hz. (top) One hour waveform data. (bottom) A 700 second segment. No clear signals corresponding to near field observation of the Aso volcano tremor are observed at SSE.