



Supplement of

Comment on “Ultra low frequency (ULF) electromagnetic anomalies associated with large earthquakes in Java Island, Indonesia by using wavelet transform and detrended fluctuation analysis” by Febriani et al. (2014)

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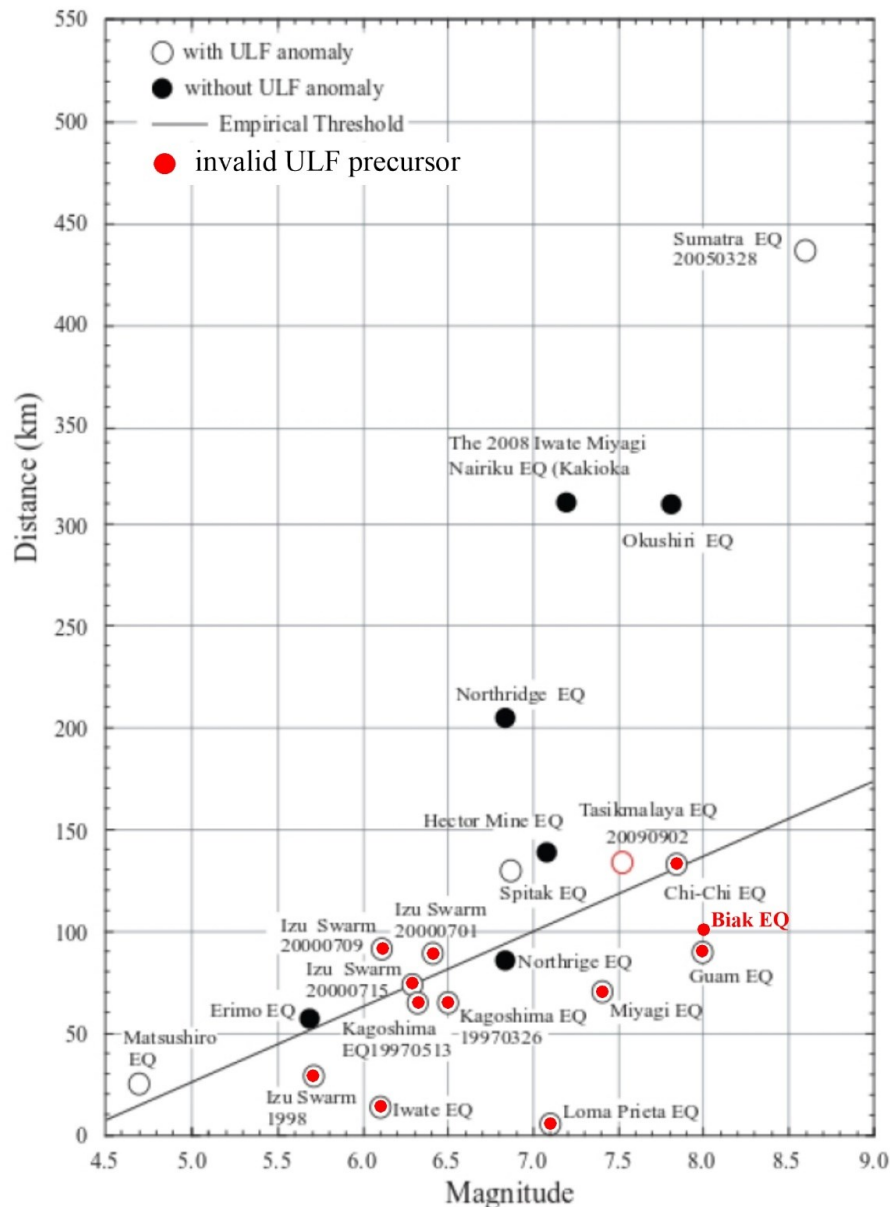


Figure S1. The black continuous line indicates the empirical relationship ($R = 40M - 180$) between the earthquake magnitude M and the distance R from the epicenter of the ULF station where the anomaly was observed (see Febriani et al., 2014, Fig. 10). We have included the Biak earthquake as in the original views by Hattori et al. (2004) and Hayakawa et al (2007). Note that the relationship was derived using invalid ULF precursors (see Table S2).

References

Hattori, K., Takahashi I., Yoshino, C., Isezaki N., Iwasaki H., Harada M., Kawabata K., Kopytenko E., Kopytenko Y., Maltsev P., Korepanov V., Molchanov O., Hayakawa M., Noda Y., Nagao T., and S. Uyeda: ULF geomagnetic field measurements in Japan and some recent results associated with Iwateken Nairiku Hokubu earthquake in 1998, *Phys. Chem. Earth*, 29, 481–494, doi:10.1016/j.pce.2003.09.019, 2004.

Hayakawa, M., Hattori, K., and Ohta, K.: Monitoring of ULF (ultralow-frequency) geomagnetic variations associated with earthquakes, *Sensors*, 7, 1108–1122, doi:10.3390/s7071108, 2007.

Table S1. Papers cited by Febriani et al. (2014) (and corresponding reviews) that have reported invalid ULF magnetic precursors.

Papers	Earthquake	Reviews
Akinaga et al., 2001.	1999 Chi-Chi earthquake	Masci, F., 2011a, doi:10.1016/j.pepi.2011.05.001
Fraser-Smith et al., 1990.	1989 Loma Prieta	Campbell, 2009, doi:10.1029/2008JA013932 * Thomas et al., 2009a, doi:10.1016/j.pepi.2008.11.014
Hattori, 2004.	1998 Iwateken Nairiku Hokubu 1997 Kagoshimaken-Hokuseibu	Masci, F., 2011a, doi:10.1016/j.pepi.2011.05.001
Hattori et al., 2002.	1997 Kagoshimaken-Hokuseibu	Masci, F., 2011a, doi:10.1016/j.pepi.2011.05.001
Hattori et al., 2004a.	1998 Iwateken Nairiku Hokubu	Masci, F., 2011a, doi:10.1016/j.pepi.2011.05.001
Hattori et al., 2004b.	2000 Izu	Masci, F., 2011b, doi:10.5194/nhess-11-2193-2011.
Hayakawa et al., 2008.	1993 Guam	Masci, F., 2010, doi:10.1029/2010JA015311. Masci, F., 2013, doi:10.5194/nhess-13-187-2013.
Hayakawa et al., 1996.	1993 Guam	Masci, F., 2011a, doi:10.1016/j.pepi.2011.05.001 Thomas et al . 2009b, doi:1029/2009GL039020
Hayakawa et al., 2007.	1997 Kagoshimaken-Hokuseibu	Masci, F., 2011a, doi:10.1016/j.pepi.2011.05.001
Hirano and Hattori, 2011.	2008 Iwate–Miyagi Nairiku	Masci, F., 2012, doi:10.1016/j.jseaes.2012.06.009.
Ida and Hayakawa, 2006.	1993 Guam	Masci, F., 2010, doi:10.1029/2010JA015311.
Ida et al., 2006.	1993 Guam	Masci, F., 2013, doi:10.5194/nhess-13-187-2013

* Reply: Fraser-Smith et al., (2011), Comment on “Natural magnetic disturbance fields, not precursors, preceding the Loma Prieta earthquake” by Wallace H. Campbell, J. Geophys. Res., 116, A08228, doi:10.1029/2010JA016379.

Table S2. Papers where alleged ULF precursors highlighted in Figure S1 by red dots have been denied.

Earthquake	Reviews
Loma Prieta EQ 17-10-1989	Campbell, W. H. (2009), Natural magnetic disturbance fields, not precursors, preceding the Loma Prieta earthquake, <i>J. Geophys. Res.</i> , 114, A05307, doi:10.1029/2008JA013932.* Thomas, J. N., Love, J. J, Johnston, M. J. S.: On the reported magnetic precursor of the 1989 Loma Prieta earthquakes, <i>Phys. Earth Planet. Int.</i> , 173, 207-215, doi:10.1016/j.pepi.2008.11.014, 2009.
Guam EQ 08-08-1993	Thomas, J. N., Love, J. J, Johnston, M. J. S., Yumoto, K.: On the reported magnetic precursor of the 1993 Guam earthquake, <i>Geophys. Res. Lett.</i> , 36, L16301, doi:10.1029/2009GL039020, 2009. Masci, F.: On claimed ULF seismogenic fractal signatures in the geomagnetic field, <i>J. Geophys. Res.</i> , A10236,115, doi:10.1029/2010JA015311, 2010. Masci, F.: On the seismogenic increase of the ratio of the ULF geomagnetic field components. <i>Phys. Earth Planet. Int.</i> , 187, 19-32, doi:10.1016/j.pepi.2011.05.001, 2011. Masci, F.: Brief communication “On the recent reaffirmation of ULF magnetic earthquakes precursors”, <i>Nat. Hazards Earth Syst. Sci.</i> , 11, 2193–2198, doi:10.5194/nhess-11-2193-2011, 2011. Masci, F.: On the multi-fractal characteristics of the ULF geomagnetic field before the 1993 Guam earthquake, <i>Nat. Hazards Earth Syst. Sci.</i> , 13, 187–191, doi:10.5194/nhess-13-187-2013, 2013.
Biak EQ 17-02-1996	Masci, F.: On claimed ULF seismogenic fractal signatures in the geomagnetic field, <i>J. Geophys. Res.</i> , A10236,115, doi:10.1029/2010JA015311, 2010. Masci, F.: 2011, On the seismogenic increase of the ratio of the ULF geomagnetic field components. <i>Phys. Earth Planet. Int.</i> , 187, 19-32, doi:10.1016/j.pepi.2011.05.001, 2011.
Kagoshima EQs 03-26-1997, 05-13-1997	Masci, F.: 2011, On the seismogenic increase of the ratio of the ULF geomagnetic field components. <i>Phys. Earth Planet. Int.</i> , 187, 19-32, doi:10.1016/j.pepi.2011.05.001, 2011.
Iwate EQ 03-09-1998	Masci, F.: 2011, On the seismogenic increase of the ratio of the ULF geomagnetic field components. <i>Phys. Earth Planet. Int.</i> , 187, 19-32, doi:10.1016/j.pepi.2011.05.001, 2011.
Izu Swarm April-May 1998	Masci, F.: 2011, On the seismogenic increase of the ratio of the ULF geomagnetic field components. <i>Phys. Earth Planet. Int.</i> , 187, 19-32, doi:10.1016/j.pepi.2011.05.001, 2011.
Chi-Chi EQ 21-09-1999	Masci, F.: 2011, On the seismogenic increase of the ratio of the ULF geomagnetic field components. <i>Phys. Earth Planet. Int.</i> , 187, 19-32, doi:10.1016/j.pepi.2011.05.001, 2011.
Izu Swarm June-August 2000	Masci, F.: 2011, On the seismogenic increase of the ratio of the ULF geomagnetic field components. <i>Phys. Earth Planet. Int.</i> , 187, 19-32, doi:10.1016/j.pepi.2011.05.001, 2011. Masci, F., and J.N., Thomas: On the relation between the seismic activity and the Hurst exponent of the geomagnetic field at the time of the 2000 Izu swarm, <i>Nat. Hazards Earth Syst. Sci.</i> , doi:10.5194/nhess-13-2189-2013, 2013.
Miyagi EQ 13-06-2008	Masci, F: On the ULF magnetic ratio increase before the 2008 Iwate–Miyagi Nairiku earthquake by Hirano and Hattori (2011), <i>J. Asian Earth Sci.</i> , 56, 258–262, doi:10.1016/j.jseaes.2012.06.009, 2012.

* Reply: Fraser-Smith et al., (2011), Comment on “Natural magnetic disturbance fields, not precursors, preceding the Loma Prieta earthquake” by Wallace H. Campbell, *J. Geophys. Res.*, 116, A08228, doi:10.1029/2010JA016379.