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Supplement of

Air–surface exchange of gaseous mercury over permafrost soil: an investigation at a high-altitude (4700 m a.s.l.) and remote site in the central Qinghai–Tibet Plateau

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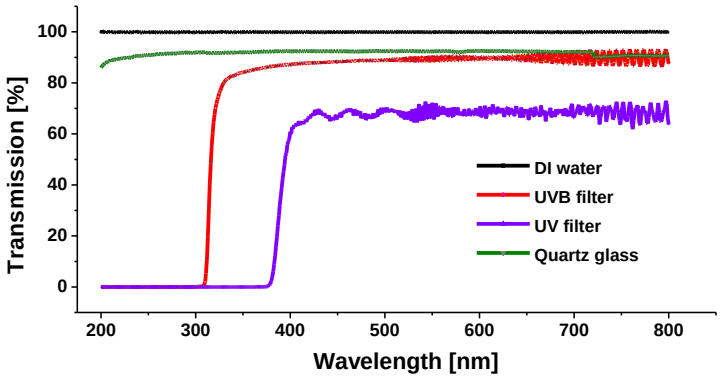

Figure S1. Transmittance of DI water, quartz glass, UVB filter (cut-off wavelength of 320 nm) and UV filter (cut-off wavelength of 405 nm) on the radiation of 200–800 nm. Aluminum foil blocks all radiation (data no shown). UVB filter transmitted 0.7% of incoming UVB, 81.4% of incoming UVA, and 84.4% of the visible light. UV filter transmitted 0.1% of incoming UVB, 3.1% of incoming UVA, and 71.2% of the visible light. The transmittances of materials were determined by UV-VIS-NIR Spectrophotometer (UV-3600, Shimadzu, Japan).

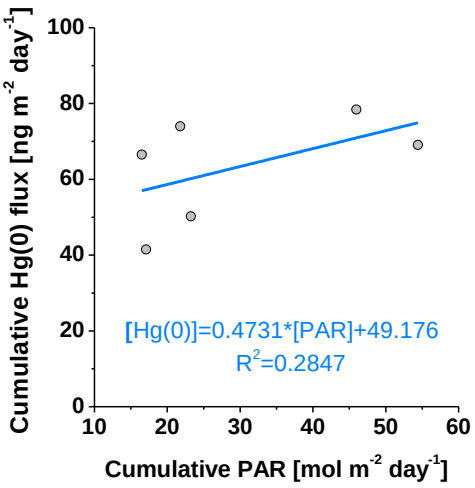

Figure S2. Relationship between the accumulative PAR and accumulative Hg(0) emission flux in the daytime in six days without precipitation during December 2014 and May–June 2015 campaign.

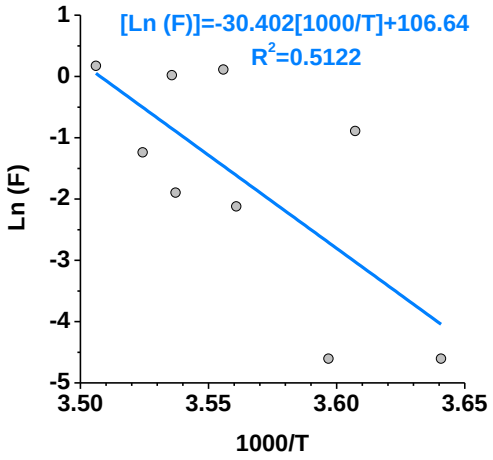

Figure S3. Arrhenius relationships between Hg(0) flux and soil temperature during May–June 2015 campaign.

Table S1. *Ea/R* for Hg(0) emission from various soils with large range of soil Hg concentrations.

Location	**Soil type**	**Soil Hg (ug kg^{-1})**	***Ea/R***	**References**
Qinghai-Tibet Plateau, China*	Background soil	12–13	30.40	This study
Mt. Gonga, South China**	Forest soil	80–880	12.56–23.56	Fu et al. (2008)
Oak Ridge, Tennessee, USA**	Forest soil	61–469	9.08–12.56	Carpi and Lindberg (1998)
Guiyang city, South China**	Urban soil	150–630	9.31–34.75	Feng et al. (2005)
Chongqing city, South China**	Urban soil	136.7–526	15.68	Wang et al. (2006)
Guizhou, South China**	Agricultural soil	249.9	19.62–30.16	Wang et al. (2003)
Idrijca, Slovenia*	Hg-mining soil	4.1–251x10^3	9.86–13.11	Kocman and Horvat (2010)
Clyde Forks, Canada*	Hg-enriched soils	240 x10^3	<10	Corbett-Hains et al. (2012)
			7.31	Theoretical value for Hg(0)

*These studies used the Hg(0) flux data in the dark to calculate the *Ea/R*.

**These studies used the bulk Hg(0) flux data in the light to calculate the *Ea/R*.

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