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Supplement of

Use of criteria pollutants, active and passive mercury sampling, and receptor modeling to understand the chemical forms of gaseous oxidized mercury in Florida

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Table SI 1 – Factor loading of the Principal Component Analysis without Hg data, factor 1 is mobile sources, factor 2 is coal combustion with atmospheric oxidation, and the factor 3 is a diel pattern factor. Bold numbers are the variables that are considered significantly correlated.

	1	2	3
ozone	-0.39	**0.74**	-0.06
CO	**0.53**	0.11	**-0.55**
SO2	0.24	**0.48**	-0.20
NO	**0.77**	0.09	0.33
NO2	**0.83**	-0.24	-0.27
NOy	**0.93**	-0.09	-0.19
WS	-0.37	0.30	0.32
TEMP	-0.16	0.02	**0.77**
RH	0.05	**-0.87**	0.05
SR	0.01	**0.73**	**0.52**

Table SI 2 – Seasonal averaged variation of measured and modeled GOM dry depositions (ng m^{-2} hr^{-1}) in 2013

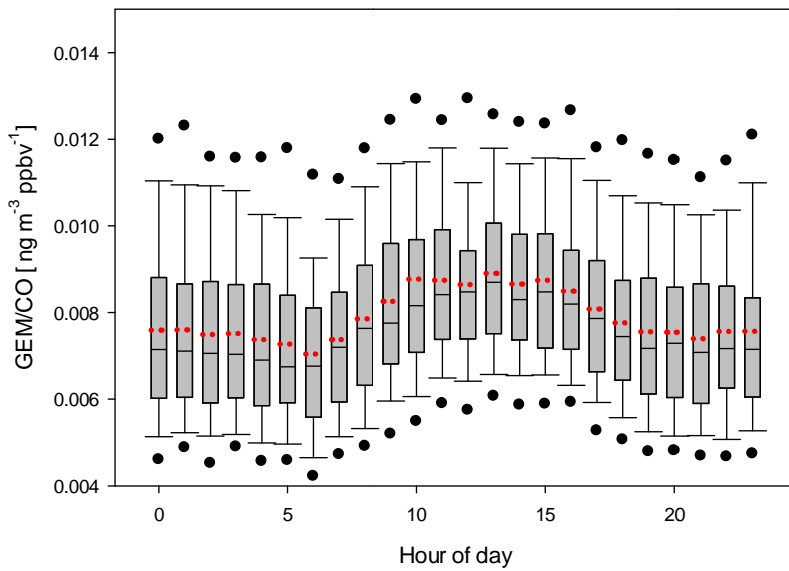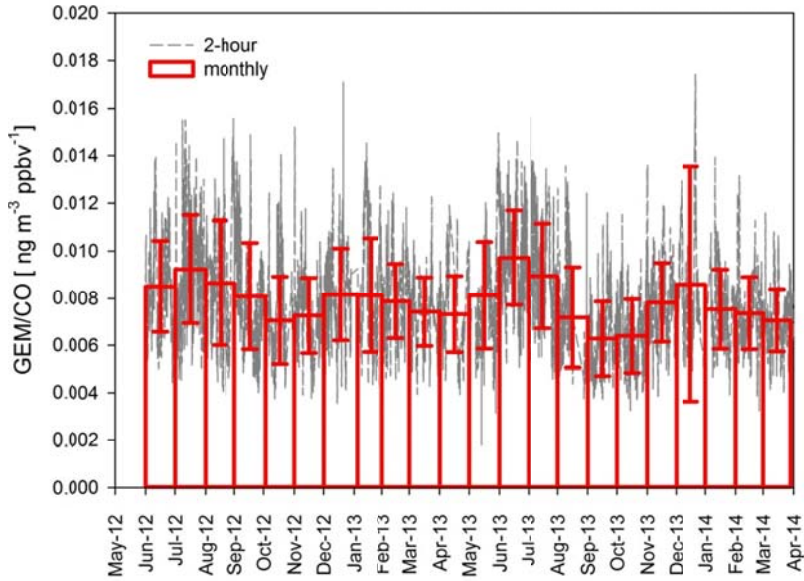|	Measured GOM dry deposition flux	Modeled GOM dry deposition α=β=2	Modeled GOM dry deposition α=β=10
Winter	0.14±0.03	0.12±0.06	0.30±0.15
Spring	0.40±0.13	0.36±0.17	1.01±0.49
Summer	0.19±0.07	0.06±0.03	0.14±0.10
Fall	0.13±0.04	0.14±0.05	0.39±0.15

Figure SI 1 – Time series (top) GEM/CO ratio (bi-hourly (grey line) and monthly (red bar, mean with 1 standard deviation)) at OLF from June 2012 to March 2014. The diel pattern of GEM/CO ratio (bottom), including the 5/95%, 10/90%, 75/25%, median and mean (red dots).
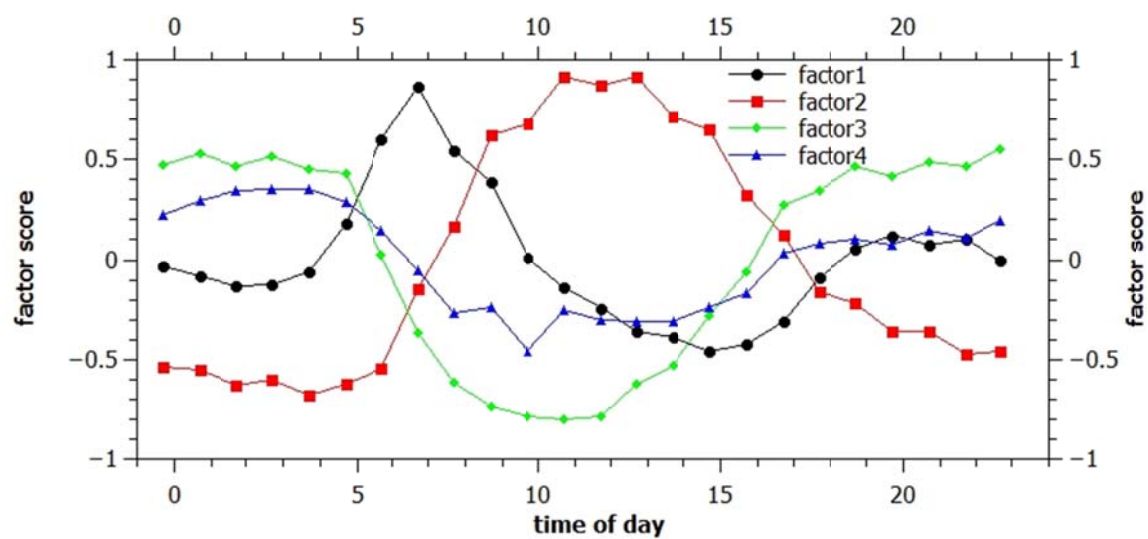
Figure SI2 – diel variation of factor score from PCA analysis with Hg data. Factor 1 is mobile sources, factor 2 is coal combustion with atmospheric oxidation, and the factor 3 and 4 are a diel pattern factors.
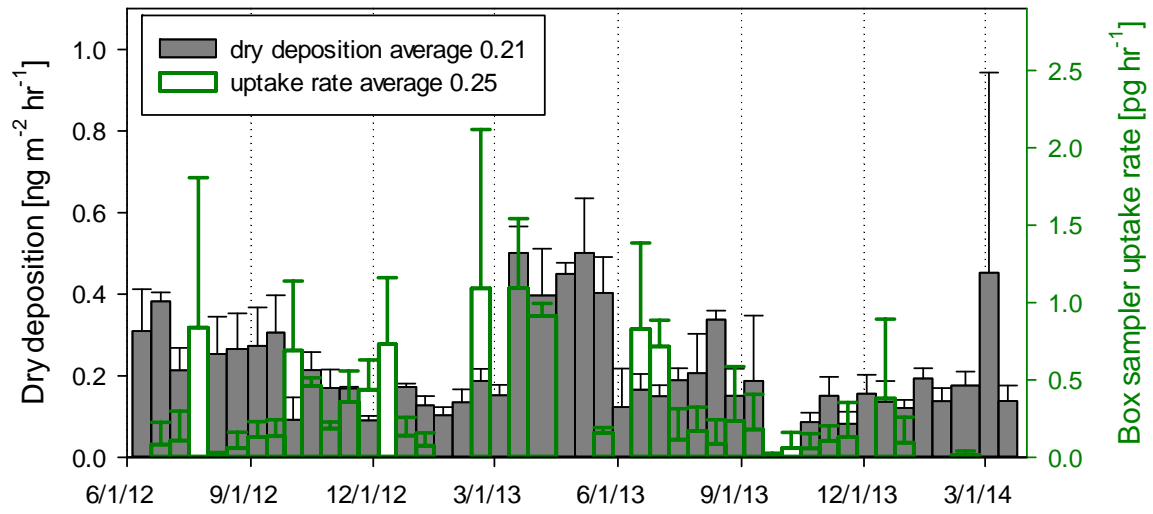
Figure SI 3 – Time series variation of GOM uptake rate (passive box sampler) and dry deposition (aerohead). Data were present in mean ± standard variation.