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## Oceanic influence on atmospheric mercury at coastal and inland sites: a springtime noreaster in New England

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**Abstract.** Continuous measurements of elemental ( $\text{Hg}^0$ ) and reactive mercury were conducted at two sites in New Hampshire during a powerful April 2007 noreaster. During the most intense period of the storm, enhancements of  $\sim 30\text{--}50$  ppqv in  $\text{Hg}^0$  were observed at a coastal and a high elevation inland site. This enhancement occurred simultaneously with elevated mixing ratios of three marine tracers,  $\text{CH}_3\text{I}$ ,  $\text{CH}_2\text{Br}_2$  and  $\text{CHBr}_3$ .

These observations suggest a marine source of  $\text{Hg}^0$ , possibly outgassing from the ocean surface during strong turbulence. The  $\text{Hg}^0$  enhancement observed 100 km inland suggests that the impact of coastal storms on terrestrial Hg cycling may not be limited to near-shore environments.

Combining  $\text{Hg}^0$  and marine tracer measurements during the storm with estimates of oceanic tracer fluxes during previous strong storms yields an order-of-magnitude estimate of the oceanic source of  $\text{Hg}^0$  during the storm ( $\sim 7$  ppqv  $\text{h}^{-1}$ ) which can account for the observed enhancement at the field sites.

▣ [Final Revised Paper](#) (PDF, 762 KB) ▣ [Discussion Paper](#) (ACPD)

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