

## **Gas exchange of mercury at the air-sea interface: Insights from measurement and models**

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As sea-air gas exchange is a major component of the global mercury (Hg) cycle, understanding the factors controlling this exchange are paramount so that the impact of climate change and other forcing on Hg inputs to the ocean can be assessed, and as a result, the impact on global human health. This talk will focus on our evolving understanding of the gas exchange of elemental Hg (Hg<sup>0</sup>) and the controlling factors, examined using interpretation of our high resolution Hg<sup>0</sup> measurements in surface ocean and marine boundary layer, and associated modelling using the GEOS-Chem Hg model. Measurements have been made recently in the coastal and open North Atlantic (cruises in 2008-10), in the equatorial Pacific and surrounding regions (in Fall 2010), and during the US Pacific Geotraces cruise (Fall 2013). Our analysis suggests that biological productivity is not as important a driver as previously thought. We will compare the conclusions from our studies with those of other recent high resolution measurements of Hg<sup>0</sup> in the ocean, and use the information to present an updated conceptual model of the primary controls over ocean gas exchange of Hg<sup>0</sup>.