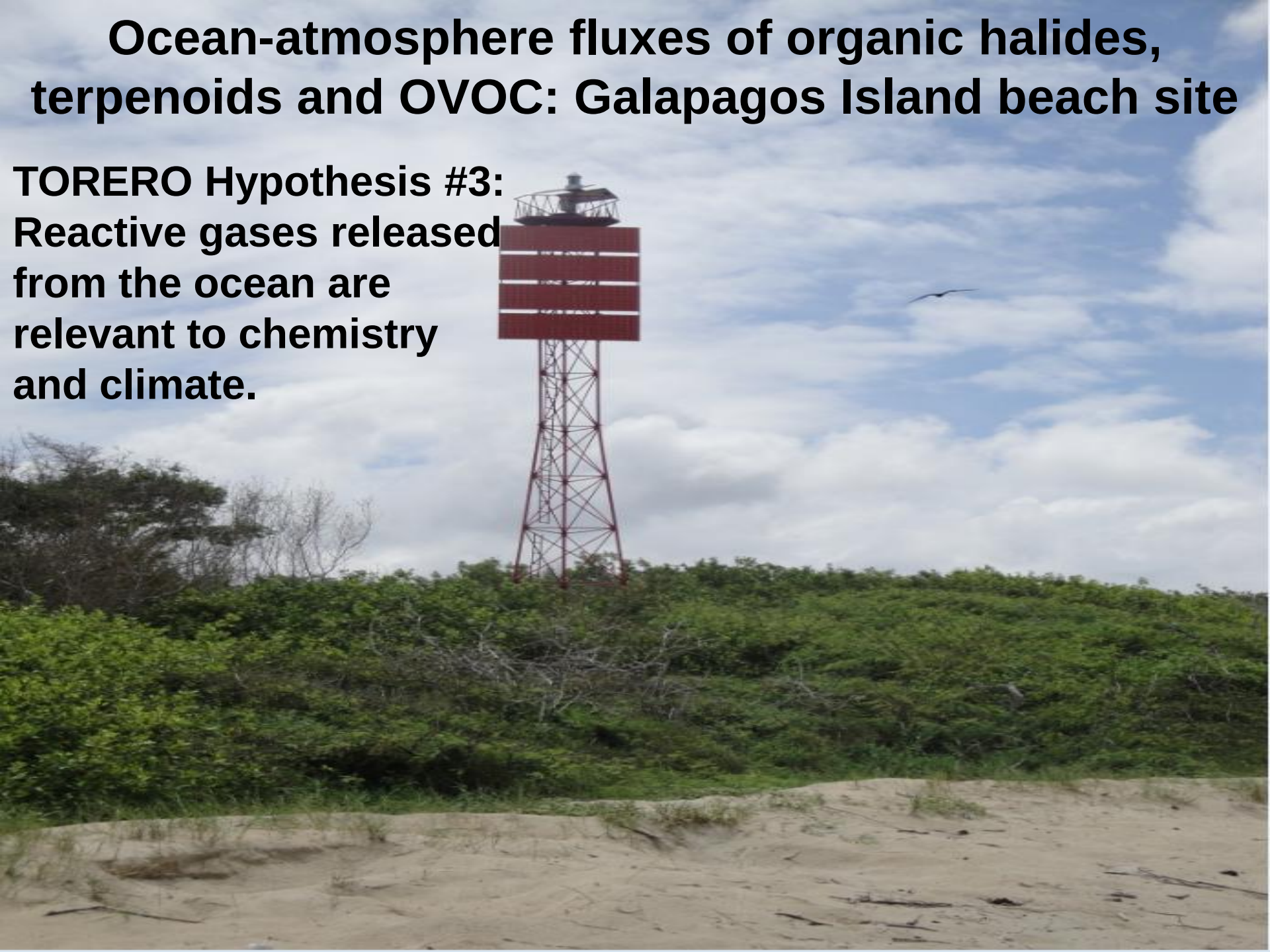
Ocean-atmosphere fluxes of organic halides, terpenoids and OVOC: Galapagos Island beach site

TORERO Hypothesis #3: Reactive gases released from the ocean are relevant to chemistry and climate.



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J. P. Greenberg et al., *Environ. Chem.* **2005**, *2*, 291–294. doi:10.1071/EN05072

Marine Organic Halide and Isoprene Emissions Near Mace Head, Ireland

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Environmental Context. *Atmospheric aerosols have received increasing attention, not only because they include cloud condensation nuclei, essential for precipitation, but also because of their absorption and scattering of radiation, which may affect climate. The process of aerosol formation, however, is not well understood. This paper describes measurements of the fluxes into the atmosphere of several possible biogenic precursors to primary aerosol production.*

Average Fluxes ($\mu g\ m^{-2}\ h^{-1}$)
Isoprene (24), CHBr3 (6), CH2Br2 (0.8), CH2I2 (0.1), CH2BrI(0.1)

Mace head fluxes were estimated from vertical gradients and an estimate of eddy diffusivity

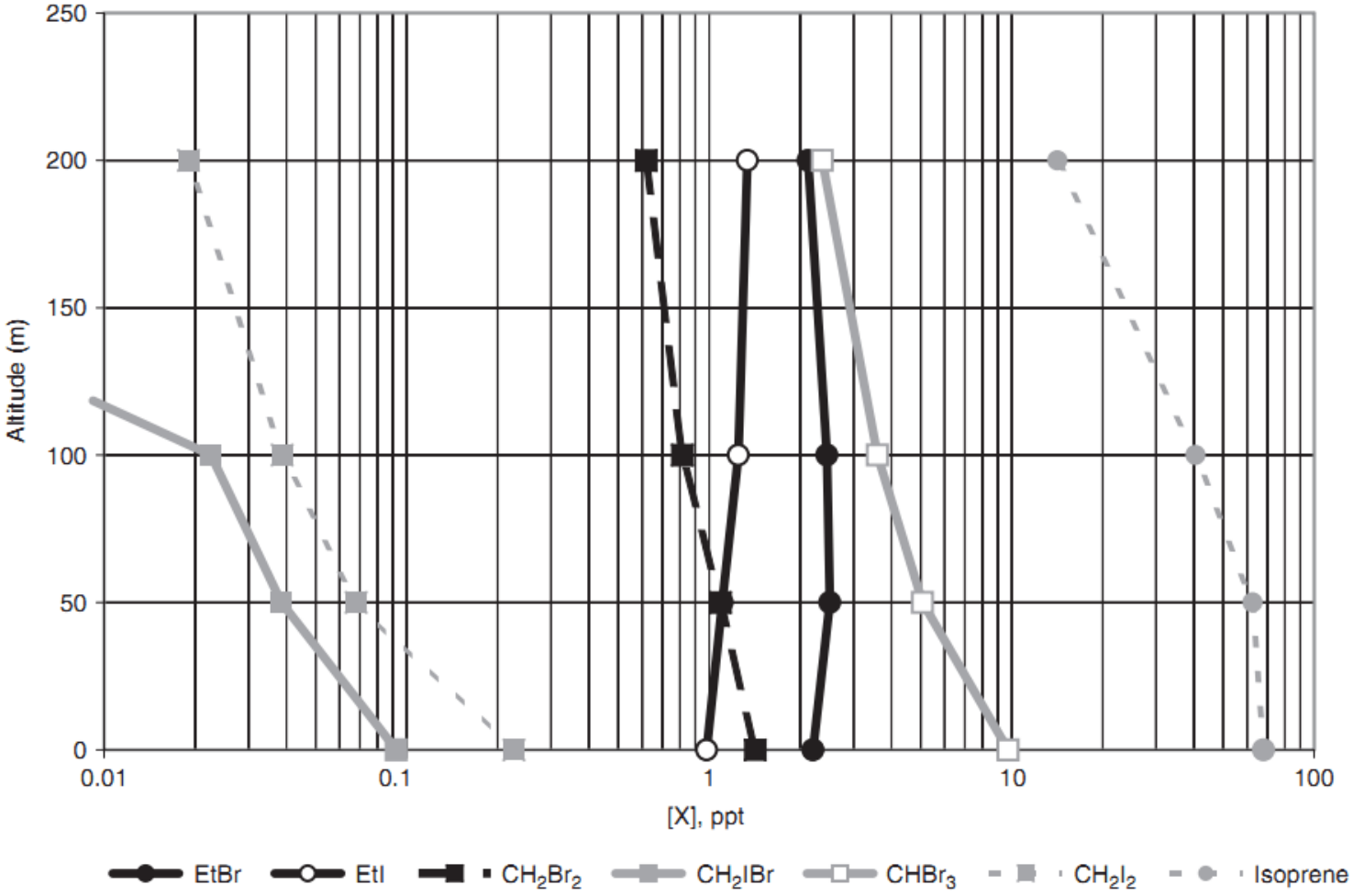
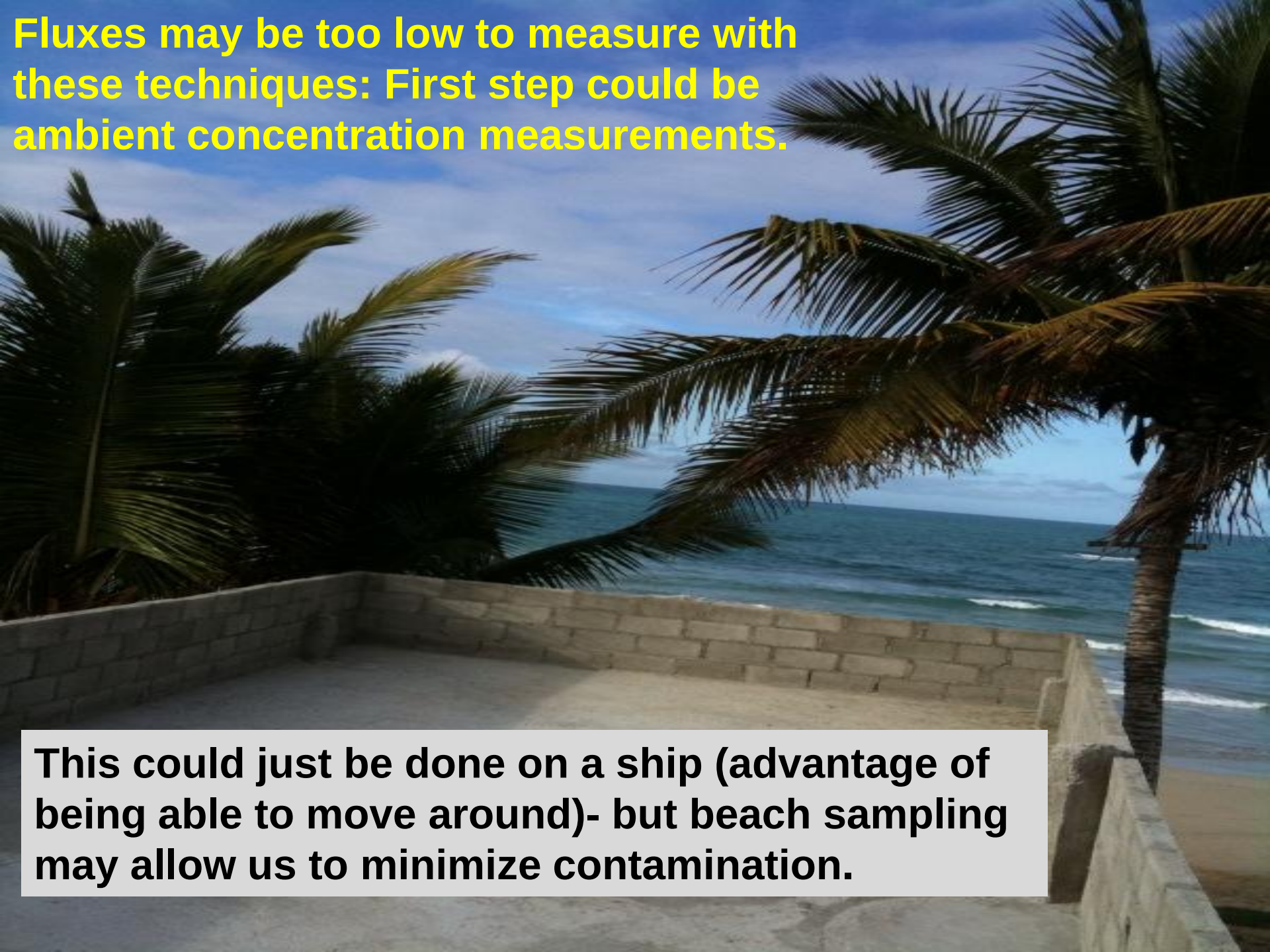


Fig. 1. Median concentration profiles for selected volatile organic compounds from the Martin Ryan Institute.

Surface layer flux techniques

Preferred method for VOC flux is eddy covariance with Proton Transfer Reaction Mass Spec. (PTRMS or TOF-PTRMS)

Alternatives include Relaxed Eddy Accumulation (REA) and vertical gradients



Fluxes may be too low to measure with these techniques: First step could be ambient concentration measurements.

This could just be done on a ship (advantage of being able to move around)- but beach sampling may allow us to minimize contamination.