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Atmos. Chem. Phys., 6, 1181-1184, 2006

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## An improved inlet for precisely measuring the atmospheric Ar/N<sub>2</sub> ratio

T. W. Blaine, R. F. Keeling, and W. J. Paplawsky

Scripps Institution of Oceanography, University of California, San Diego, La Jolla, CA 92093-0244, USA

**Abstract.** The atmospheric Ar/N<sub>2</sub> ratio is expected to be useful as a tracer of air-sea heat exchange, but this application has been hindered in part due to sampling artifacts. Here we show that the variability in δ(Ar/N<sub>2</sub>) due to thermal fractionation at the inlet can be on the order of 40-80 per meg, and we introduce the use of an aspirated solar shield that successfully minimizes such fractionation. The data collected using this new inlet have a mean diurnal cycle of 1.0 per meg or less, suggesting that any residual thermal fractionation effect is reduced to this level.

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