

***Interactive comment on* “Technical Note: Long-term memory effect in the atmospheric CO₂ concentration at Mauna Loa” by C. Varotsos et al.**

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We read the paper with interest. We have performed similar analysis on atmospheric-CO₂ hourly data at several sites worldwide. In fact about a couple of years earlier we had run DFA on monthly mean CO₂ data from MLO (by Dave Keeling and coworkers at SIO, 2004) and on a paleo record of CO₂ from ice cores (Barnola et al., 2003). Then we failed to establish persistent long-range correlations in CO₂ records. This is in agreement with the short comment by Dr. Imre M. Janosi.

Later high frequency CO₂ data (hourly time interval) became available and we have re-visited this issue. We have extended correlation statistics using power-law and wavelet analysis. Such analyses have been suggested by the reviewers too. These statistics are also derived for atmospheric general circulation model based transport model sim-

ulations of atmospheric-CO₂. The similarity and difference in correlations statistics of observed and modelled CO₂ are discussed.

We have prepared a manuscript using these analysis, which is available from the X-Archive database (Patra et al., 17 Oct 2006). The authors might be aware of this article, and we believe it is of relevance to the discussions in ACPD.

References:

C. D. Keeling and T.P. Whorf, Atmospheric CO₂ records from sites in the SIO air sampling network, In Trends: A Compendium of Data on Global Change, CDIAC, ORNL, U.S. DoE, Oak Ridge, Tenn., U.S.A., 2004.

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P. K. Patra, M. S. Santhanam, P. Manimaran, M. Takigawa and T. Nakazawa, 1/f noise and multifractality in atmospheric-CO₂ records, available at <http://arxiv.org/abs/nlin.AO/0610038>, 17 October 2006.

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