

Interactive comment on “Nitrous oxide emissions from the Arabian Sea: A synthesis” by “H. W. Bange et al.”

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Comment on Anonymous Referee #1, Atmos. Chem. Phys. Discuss, 1, S8-S9, 2001.

Thank you for your helpful comments. Let me focus on your main concern: the change of atmospheric N₂O with the time. To account for this effect we have estimated for the error propagation a rather large mean error of the atmospheric N₂O mole fraction of +/- 2%, equal to a range from 301 ppb to 313 ppb N₂O (see Table 5). Of course this does not reflect the precision of the atmospheric measurements themselves which are usually much better than 1%. Another problem arises because of the fact, that the used data are not equally distributed over time and space. 27% of the data are from 1976/77 and about 71% are from the period 1994-97 which makes it very difficult to choose an appropriate mean atmospheric value. The best solution for this problem would have been to use N₂O saturation ratios instead of N₂O concentration. Since the

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N₂O sea water concentration depends on the atmospheric concentration, saturation ratios calculated with actual N₂O atmos. values measured on board are much more representative. However, saturation ratios or atmospheric N₂O values have not been available for all data sets. H. Bange, Institute for Marine Research, Kiel, Germany. hbange@ifm.uni-kiel.de

Interactive comment on Atmos. Chem. Phys. Discuss., 1, 167, 2001.

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