

Interactive comment on “A reconstruction of the past trend of atmospheric CO based on firn air samples from Berkner Island, Antarctica” by S. S. Assonov et al.

Anonymous Referee #1

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General comments:

The paper by Assonov et al. addresses a reconstruction of past CO trend from firn air for the first time. Only results from one of the three stations (Berkner) discussed in the paper prove free enough from contamination to warrant a reliable trend. A large number of experimental details are listed and discussed in detail in the paper, so this does not have to be included in this short review. The overall trend in the 20th century ranges from about 38 ppb to 52.5 ppb, clearly beyond the errors discussed in detail in the text. Hence, the increase seems to be real and it has the right size to connect

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to the current atmospheric levels (figure 8). Due to the large amount of air sampled originally for ^{14}C analysis the time resolution is somewhat coarse and an annual cycle cannot be resolved. Two model trends (CH_4 and CH_3Cl) for estimating the time axis give similar results for assigning a time stamp to the CO concentrations as a function of depth, assigning the depth at 58.88 m to the year 1968.

Technical corrections:

Page 10261, line 14 (on-line version): brings it's own problems.

Page 10265, line 21: by the LGGE team of the project.

Page 10266, line 44: Berkner campaign, closer attention was paid

Page 10266, line 23: contamination by ambient air

Page 10266, line 26: contamination not exceeding 15%.

Page 10268, line 3: Dome C are higher than those of Berkner and the accompanying

Page 10279, line 13: is that it represents a sensitive indicator

Figure 11: What is the curve depicted in the lower part of the figure?

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 10259, 2005.

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