

Interactive comment on “Patterns of millennial variability over the last 500 ka” by M. Siddall et al.

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I don't want to comment on the new statistical method proposed here (which others should be better placed to comment on), or on the plausibility of the proposed atmospheric circulation mechanism. However, in order to avoid claiming more novelty than exists in this paper, the authors should explicitly cite previous papers (including some of the present authors) that have clearly already documented that millennial scale variability was pervasive in previous glacials. Jouzel et al (2007) made a pretty clear statement based on the same deuterium record as used by the present authors: "Our record exhibits quite similar millennial climate variability during the past three glacial periods, in terms of both magnitude and pacing (fig. S5), suggesting this was also the case in the North Atlantic, as indicated by sediment data (24) and inferred from CH₄ data from Antarctic cores (5, 25)." Louergue et al (2008) used the 800 ka methane record from Dome C to highlight how they saw the evolution of millennial scale vari-

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ability. While I recognise that neither of these authors used a statistical technique such as seen in the present paper, they were pretty clear in identifying the nature of earlier millennial-scale variability, and should be cited.

Jouzel, J., Masson-Delmotte, V., Cattani, O., Dreyfus, G., Falourd, S., Hoffmann, G., Nouet, J., Barnola, J. M., Chappellaz, J., Fischer, H., Gallet, J. C., Johnsen, S., Leuenberger, M., Louergue, L., Luethi, D., Oerter, H., Parrenin, F., Raisbeck, G., Raynaud, D., Schwander, J., Spahni, R., Souchez, R., Selmo, E., Schilt, A., Steffensen, J. P., Stenni, B., Stauffer, B., Stocker, T., Tison, J.-L., Werner, M. and Wolff, E. W.: Orbital and millennial Antarctic climate variability over the last 800 000 years, *Science*, 317, 793-796, 2007.

Louergue, L., Schilt, A., Spahni, R., Masson-Delmotte, V., Blunier, T., Lemieux, B., Barnola, J. M., Raynaud, D., Stocker, T. F. and Chappellaz, J.: Orbital and millennial-scale features of atmospheric CH₄ over the last 800,000 years, *Nature*, 453, 383-386, 2008.

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