

Interactive comment on “Sources and transport of dust to East Antarctica: new insights from high-resolution terrestrial and marine aerosol records from the Talos Dome ice core” by S. Schüpbach et al.

Anonymous Referee #2

Received and published: 22 August 2013

Major comments

Schubach et al present an interesting paper based on new nssCa and ssNa records from the coastal Talos Dome East Antarctic ice core. Results are discussed in a good amount of depth. The authors suggest that source strength changes are the main drivers of changes over the last 150 ky.

The paper would benefit from some restructuring and rewriting. In particular, readers would benefit from better subtitling, and a clearer division between Methods, Results, and Discussion.

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I do not attempt to note all changes which should be made in the detailed comments below, a variety of minor grammar and writing problems are left to the authors to identify and fix.

Detailed comments:

Should Dome F results be included within the study?

Presentation of the model of aerosol transport (p3337 onward) should be within the Methods section.

The manuscript would benefit from an explicit Discussion section, separate from the Results section This would let the authors shorten their Results section and should also help with organising/sub-titling material.

Subtitling is very poor, and provides the reader with little useful guidance in the organisation of the material/manuscript. Trying to provide mechanistically slanted subtitles, or perhaps if this proves extremely difficult, time-periods would be much more helpful.

The writing is quite poor in several places. The manuscript should be read closely and sentences fixed as necessary.

Dont use unnecessary abbreviations e.g. if ADV and SSA are only used a couple of times, easier for the reader if written out in full.

Numbers less than ten are usually written out in full i.e. one rather than 1, 'factor two' rather than 'factor 2'. And better to write 'one to one relationship' rather than 'slope 1'.

Numbered comments:

P3323,L16 rewrite

P3324, L11 12 What about marine cores?

L18-18 Not entirely clear that sea ice has these impacts. Reference statements, perhaps rewrite.

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P3325 L 15 well positioned rather well suited. Split up this sentence – too long.

L21 aeolian rather than Aeolian

L29-L4 Rephrase. Not very clear what sentence is trying to convey.

P3326 L22 “is in the following compared” rewrite.

L24-29 put into a table?

P3327 L2 “aim at complementing” -> “extend”?

L19 capitalisation

L24 “5” -> five

L25-L1 rewrite sentence

P3328 L9-12 meaning not clear

L23 “properly” is redundant

P3330 L14 add a sentence to explain principle of separation

P 3331 L 13 “in” -> “which are of “

P333 L1- Would not atmospheric circulation changes also affect particle size distributions?

L12 “is likely mainly”

P3335 L1 To make life easier for readers, could rewrite as “From 40-30... d18O is higher at EDML compared to TALDICE. This could indicate...”

L15-21 Where has the atmospheric circulation change argument gone?

L26 Has SSA been defined?

P3336 L3 Can't start a paragraph in this way. Remove “Only “.

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L14 rewrite.

P3348 L28 Write out in full in the conclusions

Interactive comment on Clim. Past Discuss., 9, 3321, 2013.

CPD

9, C1800–C1803, 2013

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C1803

