



Interactive comment on “Summer temperature trend over the past two millennia using air content in Himalayan ice” by S. Hou et al.

Anonymous Referee #2

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This is a well-written and interesting paper with a novel use of air content data from ice cores. The experimental work seems well done, though I am curious why the uncertainty in using the GC air peak is 5% - it seems like it would be smaller, but I am not sure what this uncertainty refers to - repeatability of real samples or some kind of calibration?

Regarding interpretation of the air content data as a temperature record: the authors claim two influences on air content via influence on melting in wet seasons, warmer temperatures and higher humidity. Since both coincide in the wet season, and it is not clear how to distinguish them, is it proper to claim that the data are a record of temperature? Would it be more accurate to say the data are a record of temperature and humidity? Or can it be argued from meteorological grounds that temperature must be higher when humidity is higher? Some clarification here is in order.

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The authors discuss their records relative to several other paleoclimate records, some they claim agree, some that don't. I suggest plotting some of these records, particularly the ones that are closer geographically, in Figure 3 (for example the met data from the Himalayas or the dendroclimatological data from the Himalayas and central Asia) so the reader can make the comparison.

Though the comparison with the Palmyra corals is interesting the discontinuous nature of the coral record makes it hard to discern trends. Cobb et al. did discuss ENSO activity inferred from their records though, and the authors could elaborate a little on their proposed link between ENSO and their record. Finally, there are other SST records that might be useful to compare to the air content data, for example from the Great Barrier Reef region (Hendy et al., Science, 295).

Interactive comment on Climate of the Past Discussions, 1, 155, 2005.

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