

Interactive comment on “A tropical speleothem record of glacial inception, the South American summer monsoon from 125 to 115 ka” by S. J. Burns et al.

S. J. Burns et al.

sburns@geo.umass.edu

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I thank R2 for their thoughtful comments. Nearly all of the criticisms of the ms made by R2 are related, and stem from the idea that the SASM and high northern latitude climate are not as intimately connected as is suggested in the manuscript. In particular R2 suggests that the observed abrupt SASM variability is not a response to high northern latitude temperature and ice cover, but a response to "...millennial changes in SST gradient in tropical Atlantic [that] resulted from collapse of AMOC...". The opinion of R2, however, is not supported by the literature. As explained in the expanded discussion of the high-to-low latitude teleconnection, there is a direct affect of high northern

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latitude temperature change on the SASM through the atmosphere (see e.g. Chiang and Freidman, 2012). Tropical Atlantic SST changes may be important, but are not primary. In fact, estimates of the strength of the AMOC during glacial inception suggest that AMOC was stronger during MIS 5.4 than MIS 5.5 (Guihou et al., QSR 2011). AMOC collapse, therefore, simply cannot be invoked as driving the rapid changes the SASM reported on here. Thus, I have not altered the ms in the manner suggested by R2.

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