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Interactive comment on “Recent summer Arctic atmospheric circulation anomalies in a historical perspective” by A. Belleflamme et al.

A. Belleflamme et al.

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We want to thank the reviewer for his suggestions.

We propose to add at p.4837, l.19: “Finally, Ding et al. (2014) suggest that the geopotential height increase observed over north-east Canada and Greenland, as well as the negative NAO trend could be due to sea surface temperature (SST) changes in the tropical Pacific that induce changes in the Rossby wave train affecting the North American region. Since the tropical SST changes are not reproduced by General Circulation Models under current greenhouse gas concentrations, Ding et al. (2014) conclude that these changes are due to the natural variability of the climatic system. On the other side, Screen et al. (2012) have shown that various forcings are needed to explain the observed Arctic warming: while Arctic sea ice and associated SST changes, as well

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as remote SST changes (joining the conclusions of Ding et al., 2012) are the main drivers of the winter warming, the summertime temperature increase could mainly be due to increased radiative forcing, suggesting a role of global warming. Nevertheless, while it is widely admitted that the Arctic region experiences a strong warming since some years (Screen et al., 2012), the complexity of the climate of this region, due to its multiple internal and external forcings and feedbacks does not allow us to solve the question whether the 2007-2012 circulation anomaly is (mainly) due to global warming or to natural variability.”

Interactive comment on The Cryosphere Discuss., 8, 4823, 2014.

TCD

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