



Arctic amplification and the cold February in 2015 over North America

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North America has experienced a series of cold winters in the last decades that have repeatedly broken records. The Winter of 2014/15 was no exception. Montreal recorded the coldest February on record and large part of the Northeast experienced the coldest month since beginning of the satellite observing system. More than half of the daily mean temperatures lied below the lower 10th quantile and were consecutively below up to 10 days. Although this atmospheric setting is part of the natural variability over North America its recurrence during the last decade is striking. This study analyses whether the cold event can be explained by low Arctic sea-ice conditions or anomalous SST patterns which prevailed during the winter season. Large initialised ensemble simulations of the integrated forecasting system (IFS) are used to predict the event and to disentangle the external drivers. Our results show that the event was largely an expression of natural internal variability, yet Arctic sea-ice conditions have contributed in establishing and sustaining the associated anomalous flow