



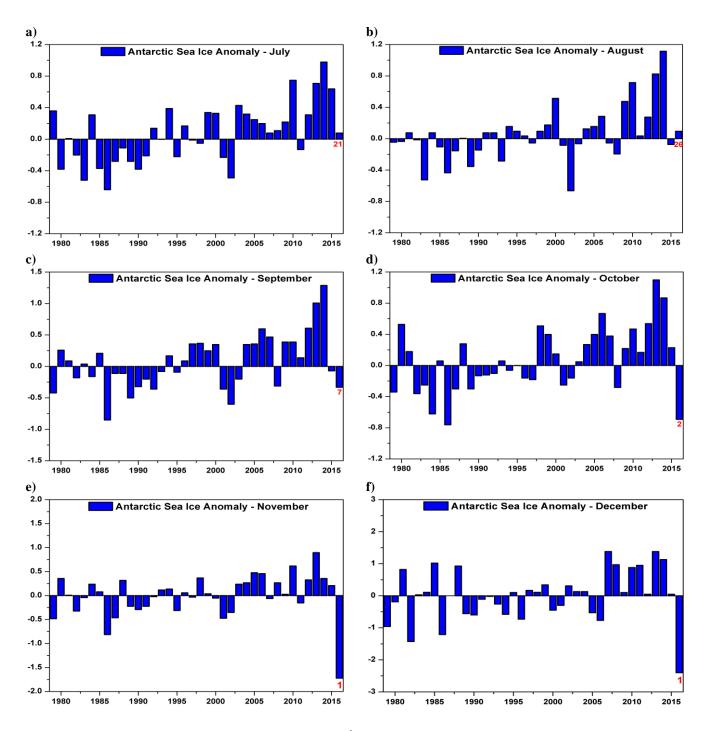
## Supplement of

## Moisture transport and Antarctic sea ice: austral spring 2016 event

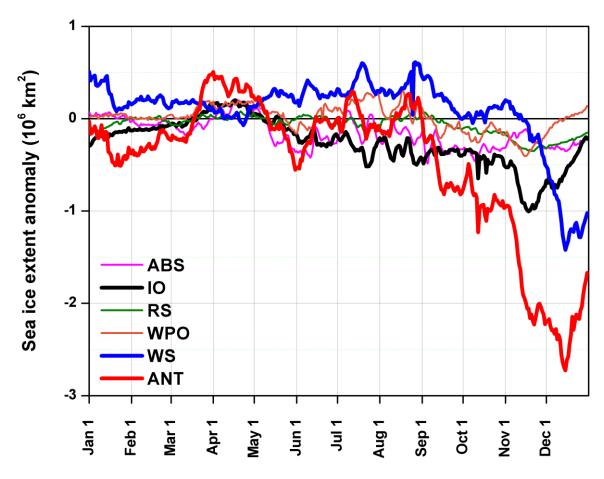
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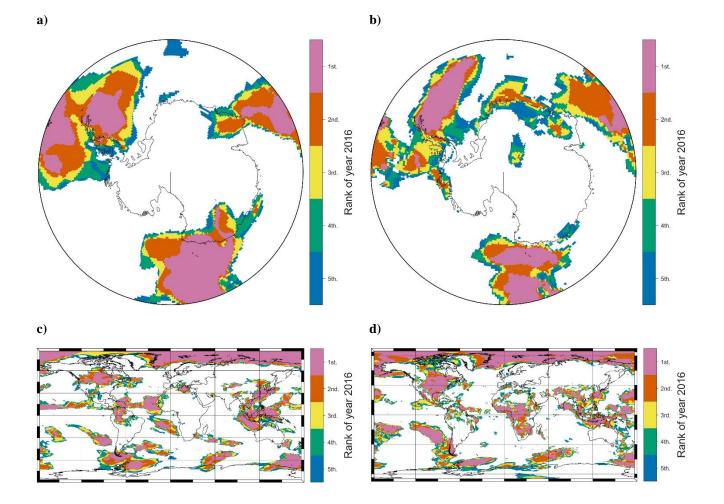
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**Figure S1.** Monthly Antarctic sea ice extent anomalies ( $10^6$  km<sup>2</sup>) from 1979 to 2016: a) July; b) August; c) September; d) October; e) November and f) December. The red number in 2016 indicates the rank of the respective month over the period 1979 - 2016. "1" indicates the month with the lowest SIE anomaly; "2" indicates the month with the  $2^{nd}$  lowest SIE anomaly, etc.



**Figure S2.** Daily sea ice extent anomalies for the year 2016 with respect to reference period 1981 - 2010: Amundsen - Bellingshausen Sea (ABS - magenta), Indian Ocean (IO - black), Ross Sea (RS - green), Western Pacific Ocean (WPO - orange), Weddell Sea (WS - blue) and Antarctica (red).



**Figure S3.** Ranking of autumn (SON) 2016: a) The vertical integral of water vapor (IWV, '1' means the moistest month over the analyzed period) over the Southern hemisphere; b) 2m air temperature (T2m, '1' means the warmest month over the analyzed period) over the Southern Hemisphere; c) as in a) but globally and d) as in b) but globally. Analyzed period: 1979–2016. Rankings below 5 appear white.