



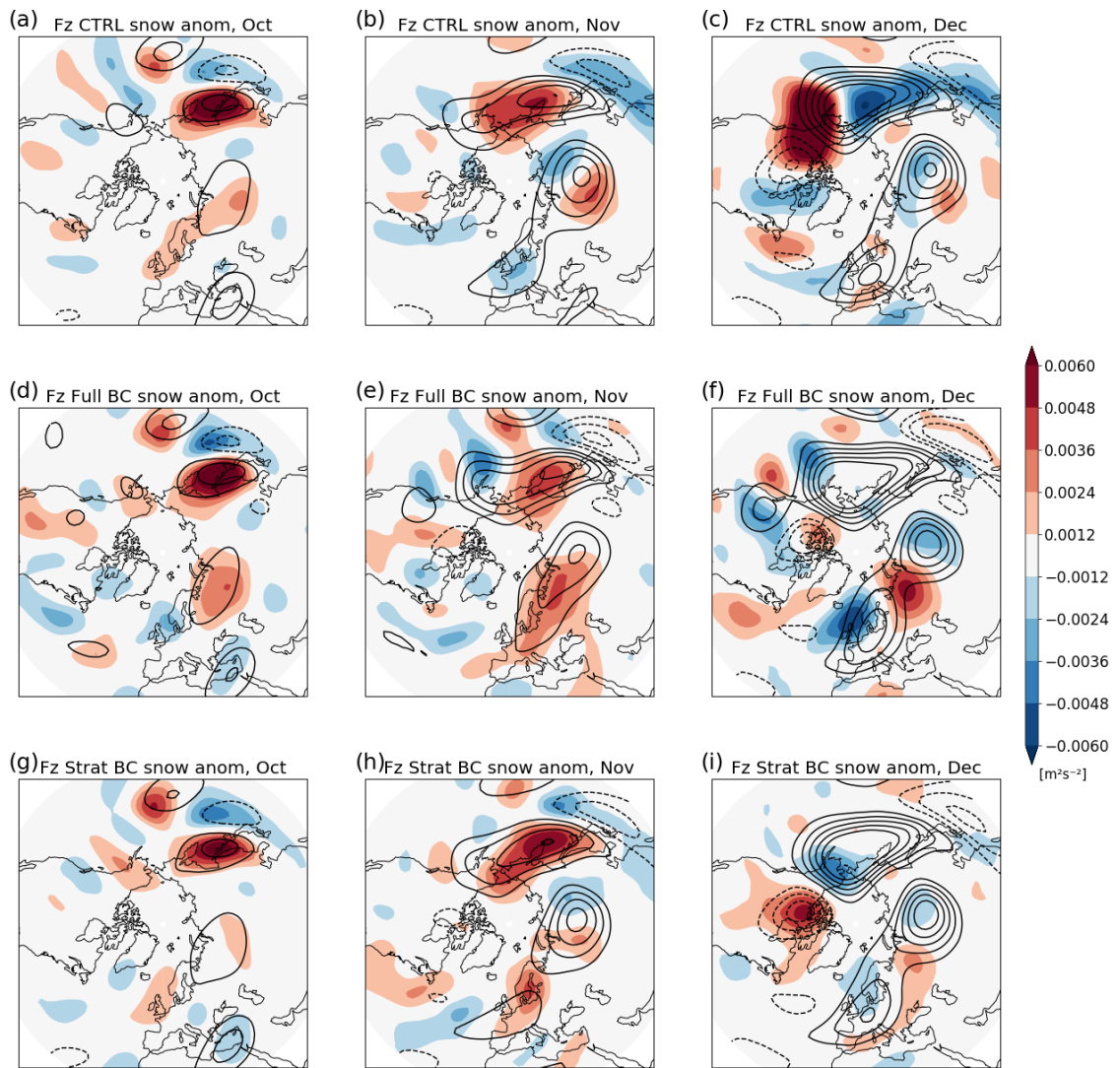
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Supplemental Material

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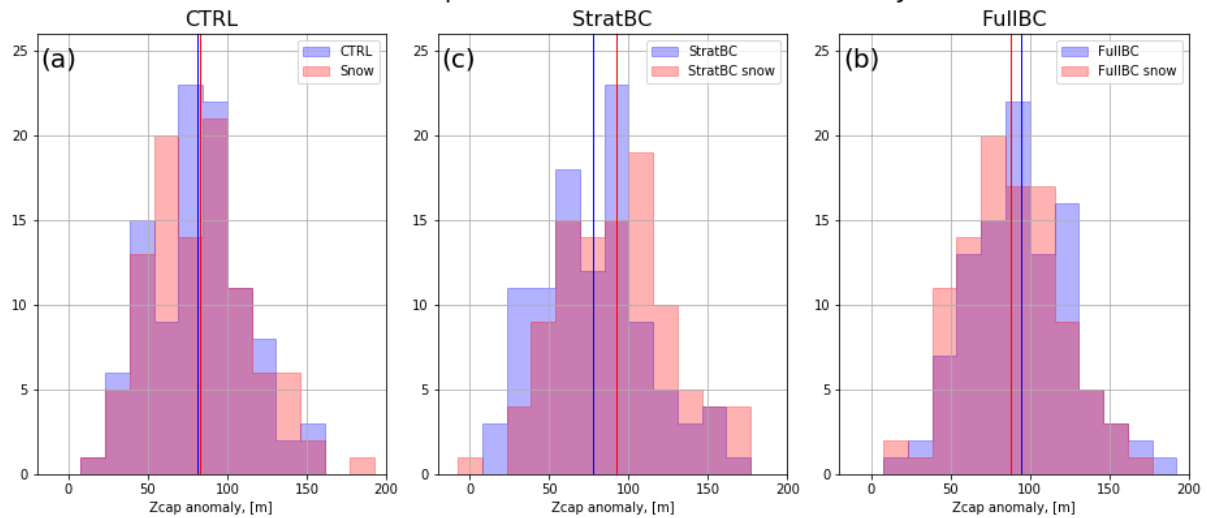
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Supplementary Figures

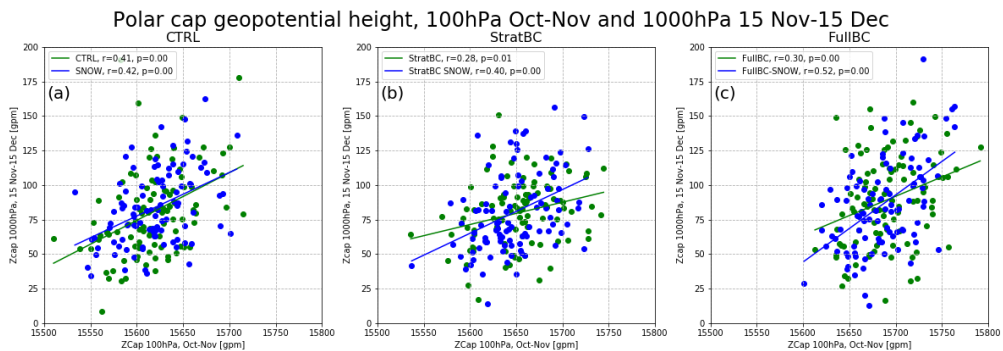


Supplementary figure 1. Monthly (Oct., Nov., Dec.) vertical Plumb flux at 100hPa. Anomalous response to snow shown as colors, climatological values shown as contours. CTRL in panels a-c, FullBC in d-f, StratBC in g-i.

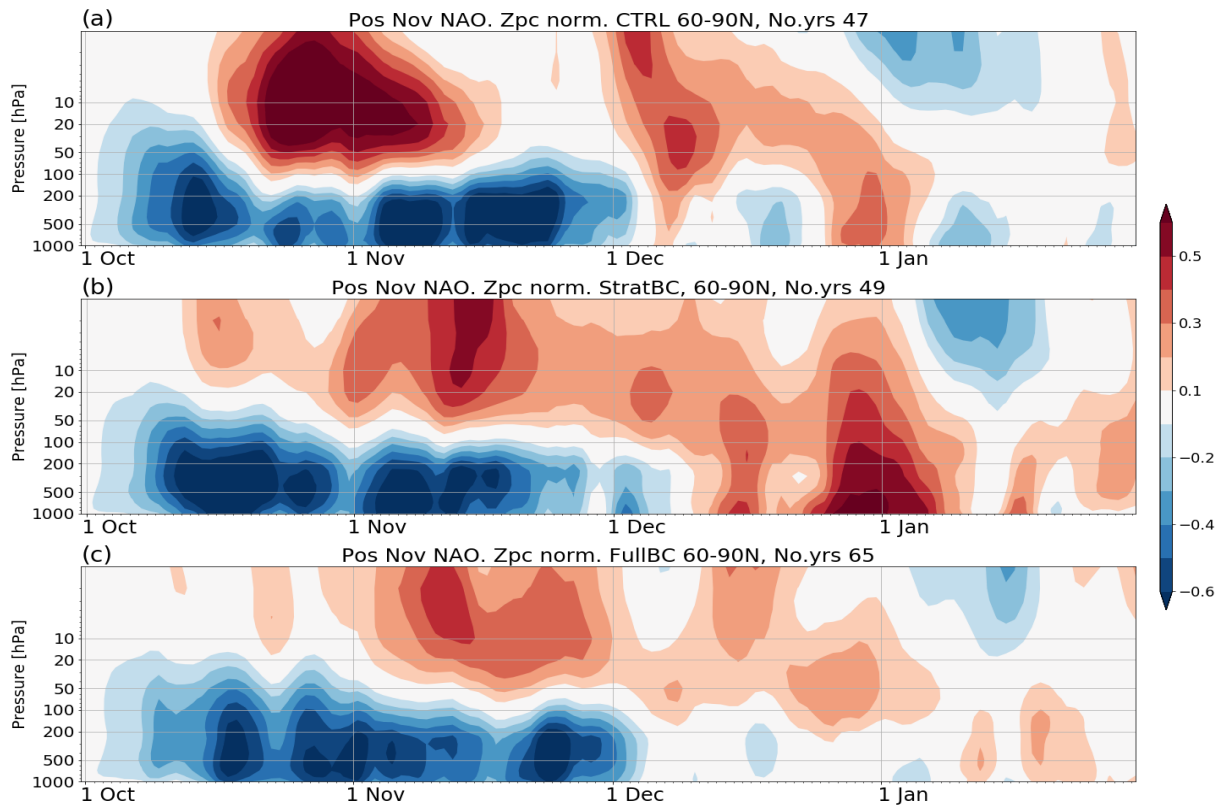
1000hPa Zcap control and snow 15th Dec-15th Jan



Supplementary figure 2. Histogram of the mean 15th Nov. - 15th Dec. polar cap geopotential height using absolute values of the control (blue) and snow runs (red), for a) CTRL, CTRL_SNOW, b) FullBC, FullBC_SNOW, c) StratBC, StratBC_SNOW. Red and blue vertical lines show mean values for 15th Nov. – 15th Dec.



Supplementary figure 3. Relationship between polar cap geopotential height (Zcap) Oct. - Nov. at 100hPa, and Zcap 15th Nov. - 15th Dec at 1000hPa.



Supplementary figure 4. Same as Figure 4 except sub-sampled for positive November NAO. Daily Zcap response due to snow anomaly, normalized by standard deviation at each pressure level. Sub-sampled by selecting years with a positive NAO in November, for a) CTRL_SNOW - CTRL, b) StratBC_SNOW - StratBC, c) FullBC_SNOW - FullBC.