Supplementary material for: "Representation of Arctic moist intrusions in CMIP5 models and implications for winter climate biases"
Figure S1: Shown as functions of the daily mean integrated moisture flux intensity between 300–1000 hPa ($f$: equation 1) and longitude (a) The multi-reanalysis mean northward moisture flux at 70°N during DJF; 1981–2005 (1975-2001 in the case of ERA40). (b-e) Mean bias, with respect to each reanalysis dataset, of the climatological northward moisture transport across 70°N in the 31 CMIP5 models during DJF; 1981–2005. (f-j) The departure of each reanalysis dataset from the multi-reanalysis mean (a). Contours in (a-e) show the standard deviation of the elements making up the composite means. Dashed lines indicate the threshold value $f_{\text{min}} = 240 \text{Tg day}^{-1} \text{deg}^{-1}$ used in the injection detection algorithm. Stippling in (b-e) denotes mean biases where at least 80% of the CMIP5 model agree on the sign of the bias. Solid black lines in (a) highlight the longitudinal extent of our objectively defined sectors.
Figure S2: Same as Figure 6, but for a moisture flux threshold of $f_{\text{min}} = 150$ Tg day$^{-1}$ deg$^{-1}$ used in the moisture injection detection algorithm (Section 2d).
Figure S3: Same as Figure 6, but for a moisture flux threshold of $f_{\text{min}} = 400 \ \text{Tg day}^{-1} \ \text{deg}^{-1}$ used in the moisture injection detection algorithm (Section 2d).
Figure S4: Same as Figure 7, but for a moisture flux threshold of $f_{\text{min}} = 150 \text{ Tg day}^{-1} \text{ deg}^{-1}$ used in the moisture injection detection algorithm (Section 2d). Both regressions are significant at the 0.0005% level.
Figure S5: Same as Figure 7, but for a moisture flux threshold of $f_{\text{min}} = 400 \text{ Tg day}^{-1} \text{ deg}^{-1}$ used in the moisture injection detection algorithm (Section 2d). Both regressions are significant at the 0.015% level.