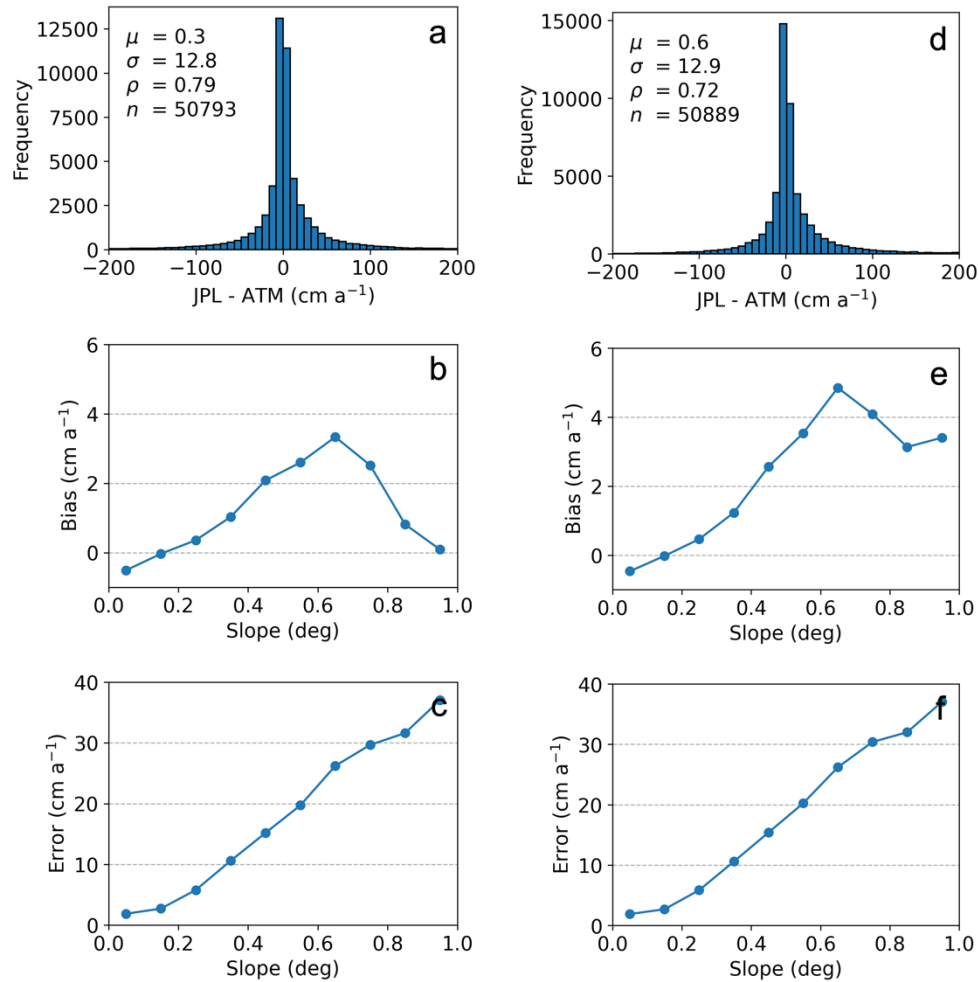
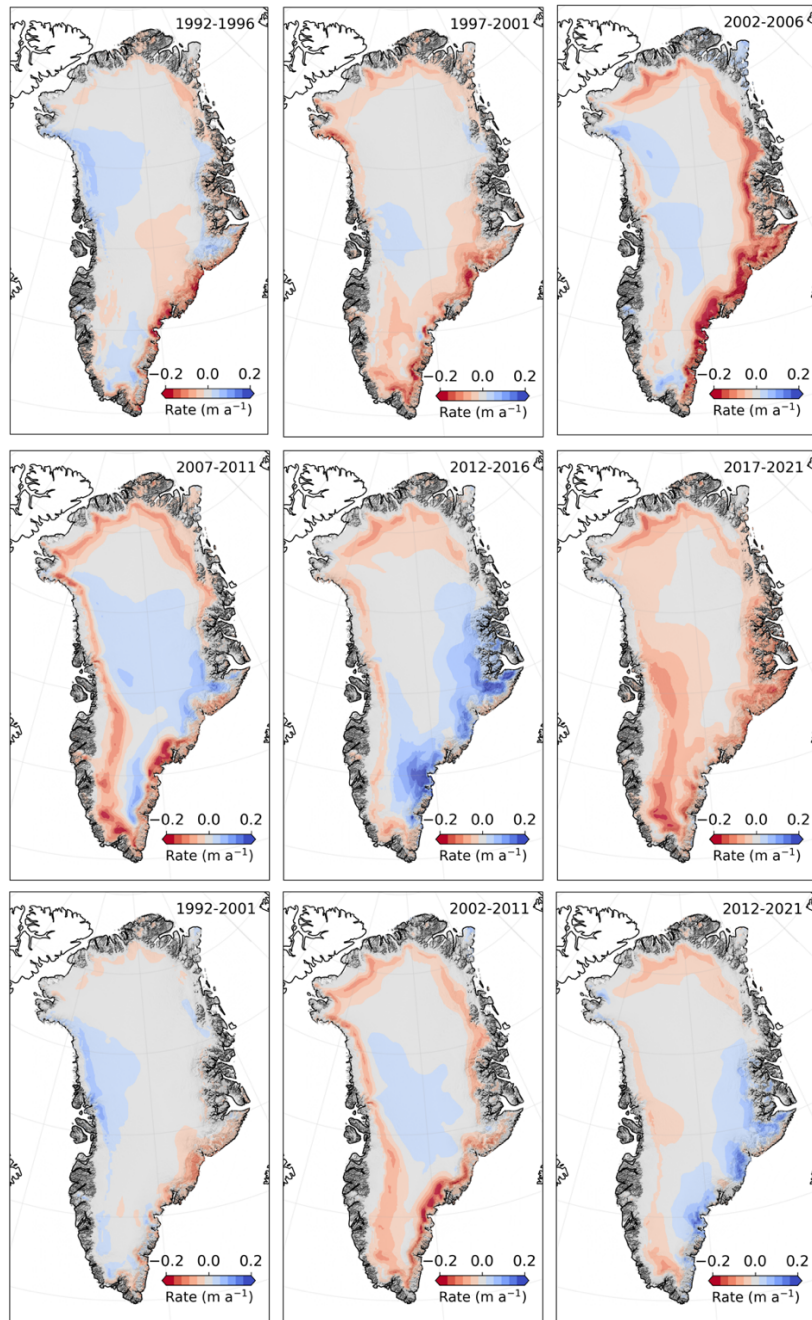


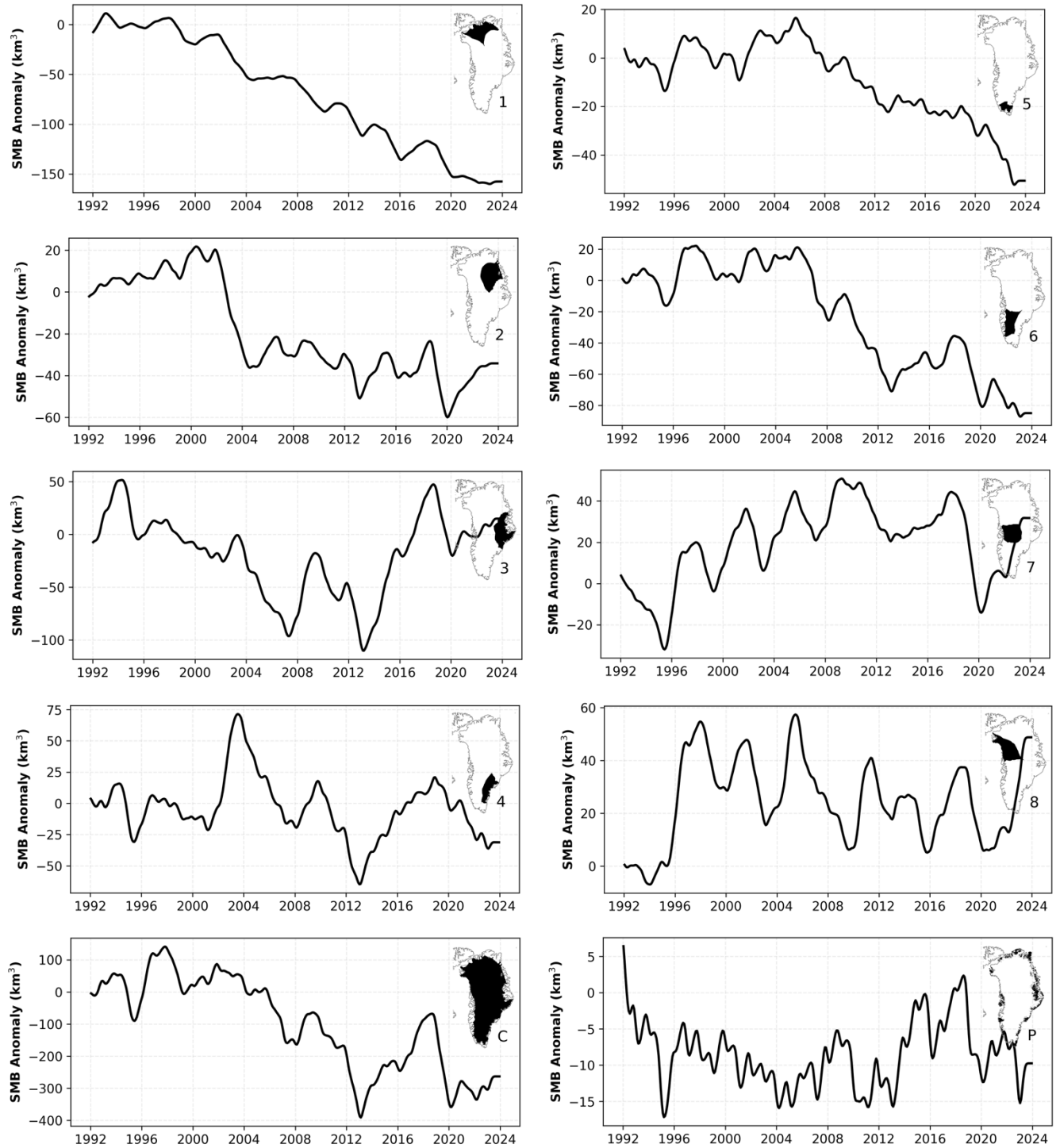
# Supplement: Elevation Change of the Greenland Ice Sheet and its Peripheral Glaciers: 1992-2023



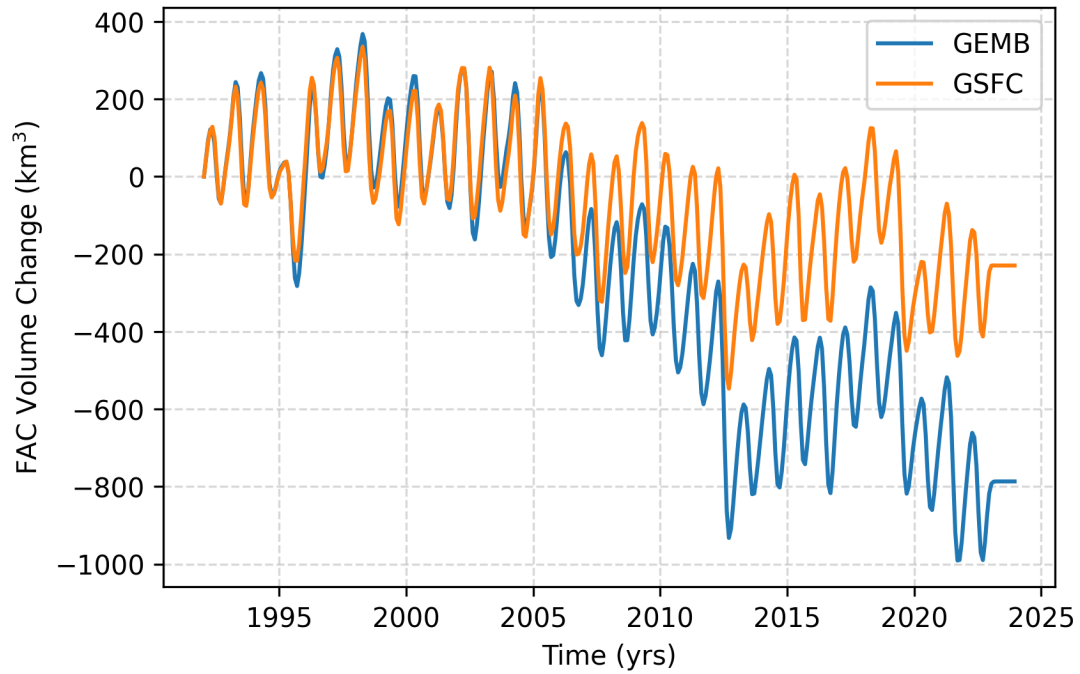
**Figure S1: Elevation change validation of two different version of the product compared to ATM derived elevation changes.** Where (a-c) is the JPL version with the background model (hypsometry and velocity) applied and (d-f) with ordinary kriging only. Overall statistics (a,d) for the two products are very similar, including the elevation change error (bottom), but a clear difference can be observed for the bias. The bias is relatively consistent for the two products up to 0.6 degrees in slope (b,e) for both of the products, but at higher slopes the bias is gradually reduced down to almost zero. Here, the background model better captures the dynamic component in the fast-flowing areas of the outlet glaciers thus providing a better estimate of the observed change compared to ATM.



**Figure S2: Surface mass balance anomaly (SMBA) generated from the Goddard FDM product over identical time period as in Figure 4. Here clear decadal trends can be observed in the overall surface mass balance of the ice sheet.**



**Figure S3: Surface mass balance anomaly (SMBA) generated from the Goddard FDM product (Medley et al., 2022) over identical time period as in Figure 5. Time series have been filtered using a 12 month moving averaging filter to highlight long-term trends.**



**Figure S4: Firn air content (FAC) volume change difference from the GEMB and GSFC firn densification models for all glaciated terrain on Greenland. This includes both the continental ice sheet and the peripheral glaciers over the 1992-2022 time period. The two models show close initial agreement but starts to diverge in the overall trend after 2005 but show overall similar shape.**