1 Broad comments

- The *Results and Discussion* section is greatly improved from the previous version, particularly the final 2 paragraphs before the *Conclusions*.
- Table 1 is much better than the previous version for comparing between previously published results.
- Mentioning the regional sensitivity to the constraints is a good improvement.
- The section numbers seem to be off. (i.e. 1 Introduction, 1 IOM method, 2.1 SMB and D)
- Some of the annotations can be improved or replaced in the case of prior version remnants. The annotations adds complexity to reading the manuscript.
- My main concern is still related to the application of the correction factors. As opposed to the GRACE level-3 product (Landerer and Swenson, 2012) and the JPL GRACE mascon product (Watkins et al., 2015), the solutions here are both scaled and offset. If you reverse the scaling factors and the offsets for the coastal regions, the resultant losses are different than the corrected versions by a degree larger than the uncertainty for the interior. Since the least squares mascon technique accounts for the attenuation of the GRACE signal from spherical harmonic truncation and the additional post-processing, the major uncertainty remaining is the leakage component. At least from what I can ascertain from the manuscript, I am not sure why there is this difference. This could be explained in the paper. This could also be tested following Tiwari et al. (2009) by recalculating the results using the GRACE residuals (GRACE-your results). This would help determine the uniqueness from the approximation corrections.

2 Line-by-line comments

- Page 2, Lines 4–6: no mention of the dynamic component of the mass balance
- Page 5, Line 14: no comma needed after "here"
- Page 16, Lines 4–7: this is mentioned as cumulative discharge anomaly, but refers to (I believe) the anomaly in discharge fluxes (δD). Perhaps also use the δD annotation for $D^{D\text{-}08}$ and $D^{D\text{-}14}$ (δD-08 and δD-14 respectively)
- Page 34, Figure 5: while the estimates before the correction are shown in the figure, the exact numbers should be listed for comparison.
- Page 37, Table A1: Using k_0 and k_1 in the caption versus α_0 and α_1 in the table. Should the units of k_0 be Gt/yr? Are you scaling the acceleration estimates differently than the trends?

References

F. W. Landerer and S. C. Swenson. Accuracy of scaled GRACE terrestrial water storage estimates. *Water Resources Research*, 48(4):n/a–n/a, 2012. ISSN 1944-7973. doi: 10.1029/2011WR011453. URL http://dx.doi.org/10.1029/2011WR011453.

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