

Supplement to:

Anti-phased steric and mass cycles and an unresolved dynamic trend in Arabian Gulf sea level

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This supplement gives the diagnostic underlying Sect. 4.4 of the main text: that the two mission-gap-related features in the Gulf mascon series (the apparent 2013–2018 dip and the post-2021 divergence between the CSR and JPL solutions) are artefacts, and that the leakage-corrected trend remains unreliable for reasons distinct from the seasonal cycle, which is unaffected.

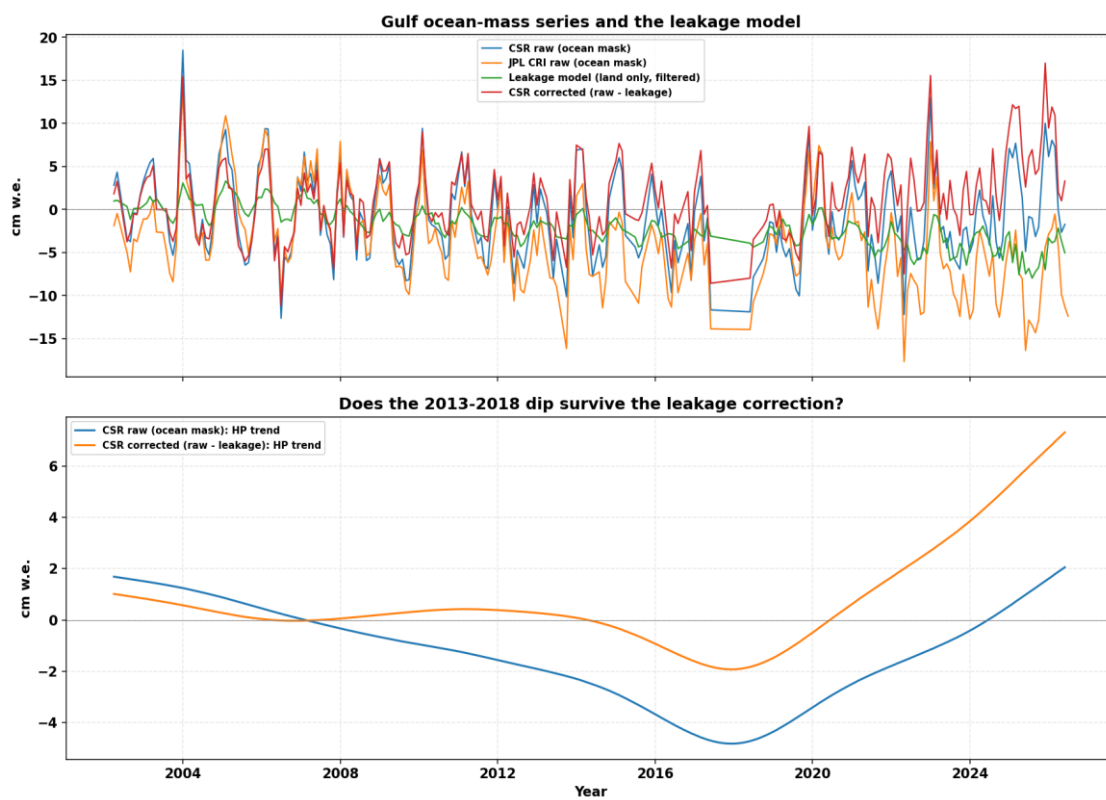


Figure S1. Gulf-mean mass from CSR (blue) and JPL CRI (orange) over the ocean mask, the forward-modelled leakage (green), and the corrected CSR series (red), with the 2017–2018 gap linearly interpolated (top); Hodrick–Prescott trends of the raw and corrected series (bottom). The apparent 2018 minimum coincides with the mission gap and the post-2021 rise is present in CSR only. Note: this figure uses a Hodrick–Prescott/piecewise-linear analysis of the gap-interpolated series specifically to illustrate the interpolation artefact; it is distinct from the harmonic model (Eq. 1 of the main text) used for every quantitative result reported there.