

Water Storage Trends in High Mountain Asia



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What is the science question? Does the sum of water storage component estimates over High Mountain Asia (HMA) add up to the total trend observed by the GRACE mission?

What are the findings? Using a new method for estimating trends from GRACE that significantly improves the spatial resolution, we find that the total water storage trends in HMA observed by GRACE are dominated by changes in glaciers and in deep groundwater storage, with little impact from variations in precipitation.

What was the impact? We identified the regions within HMA where the sum of the components does and does not agree with the total from GRACE. These results inform where additional data and/or model improvements are needed.

Why does it matter? Water storage changes in HMA have major societal impacts, as the region's large reservoirs of glaciers, snow, and groundwater provide a freshwater source to more than one billion people.

