

Multi-GNSS Slant Wet Delay Retrieval Using Multipath Mitigation Maps

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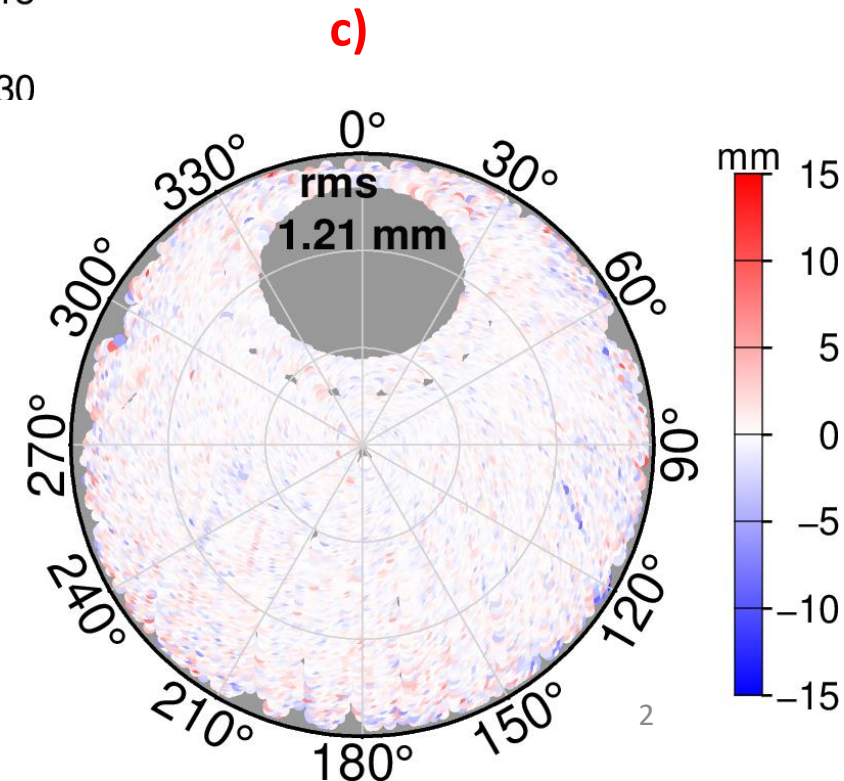
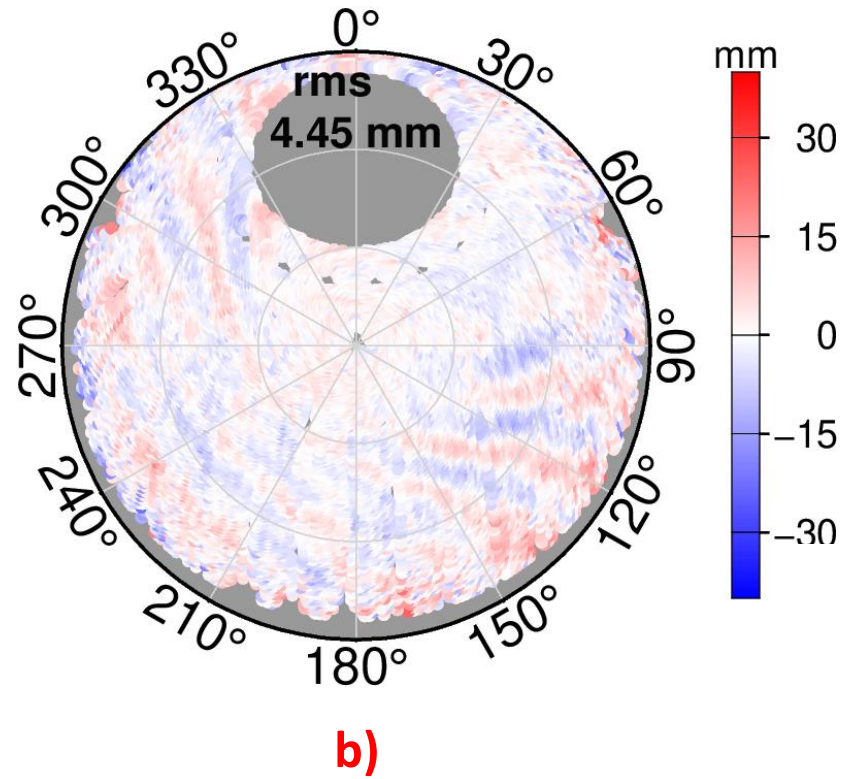
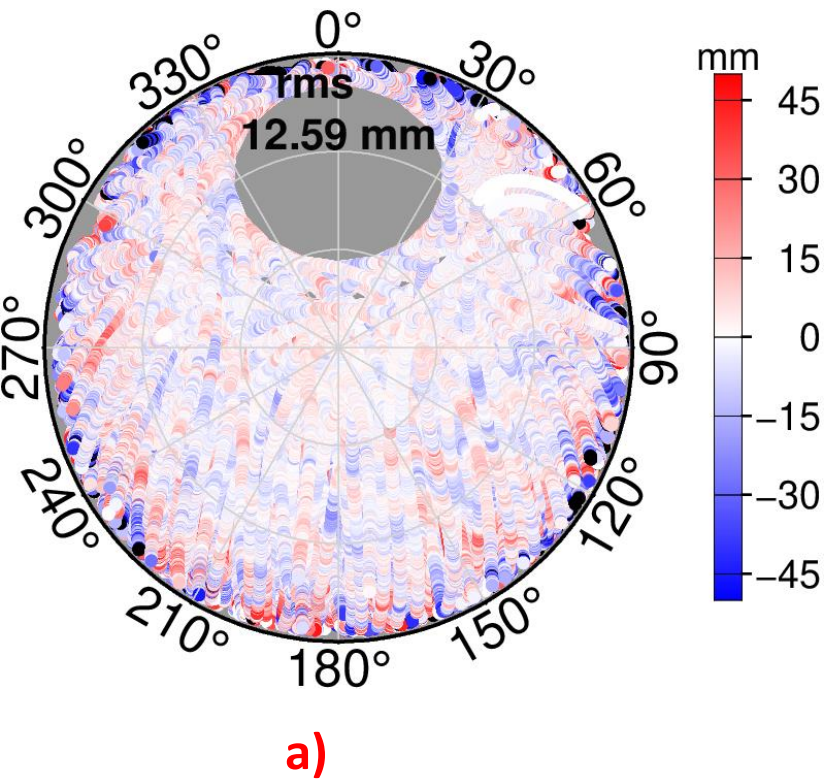
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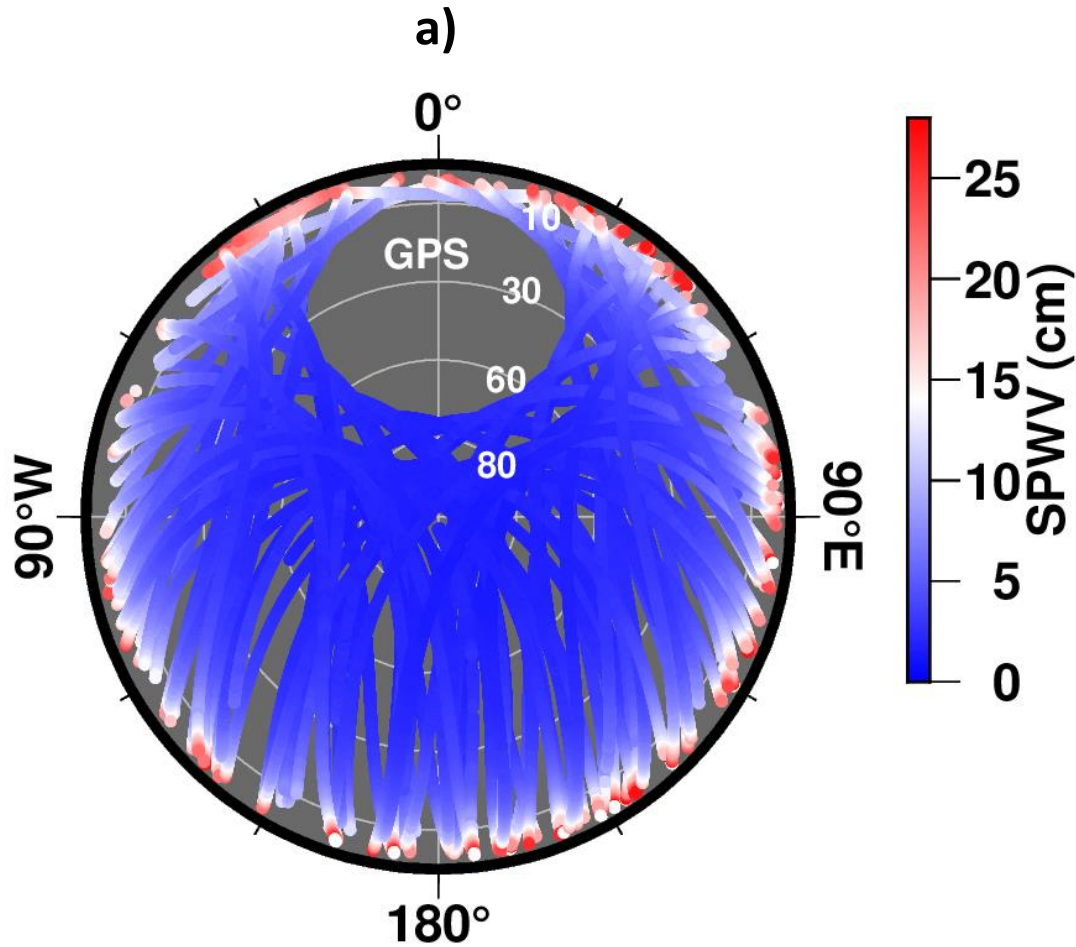


Constructions of Multipath Stacking Maps

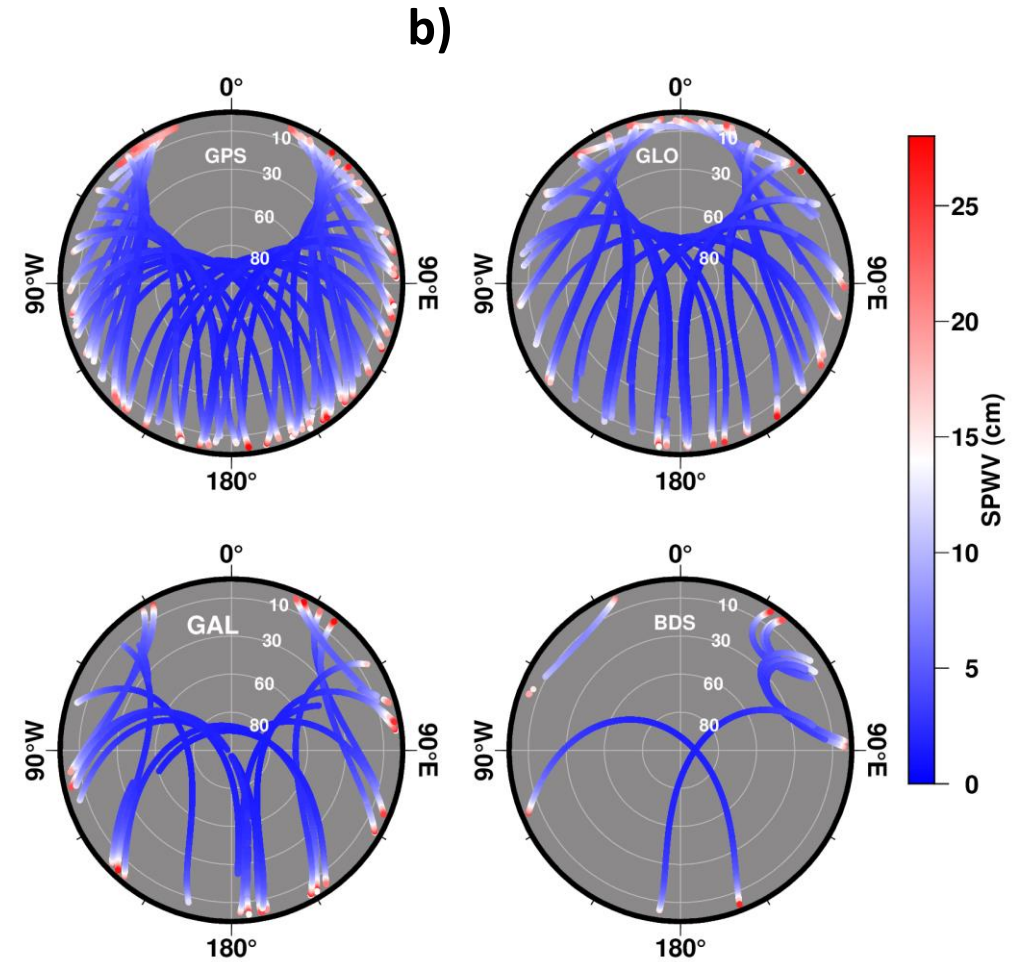


a) Multi-GNSS raw post-fit carrier phase residuals, **b)** Multipath Stacked Maps, **c)** Corrected post-fit carrier phase residuals

Slant Precipitable Water Vapour (SPWV)

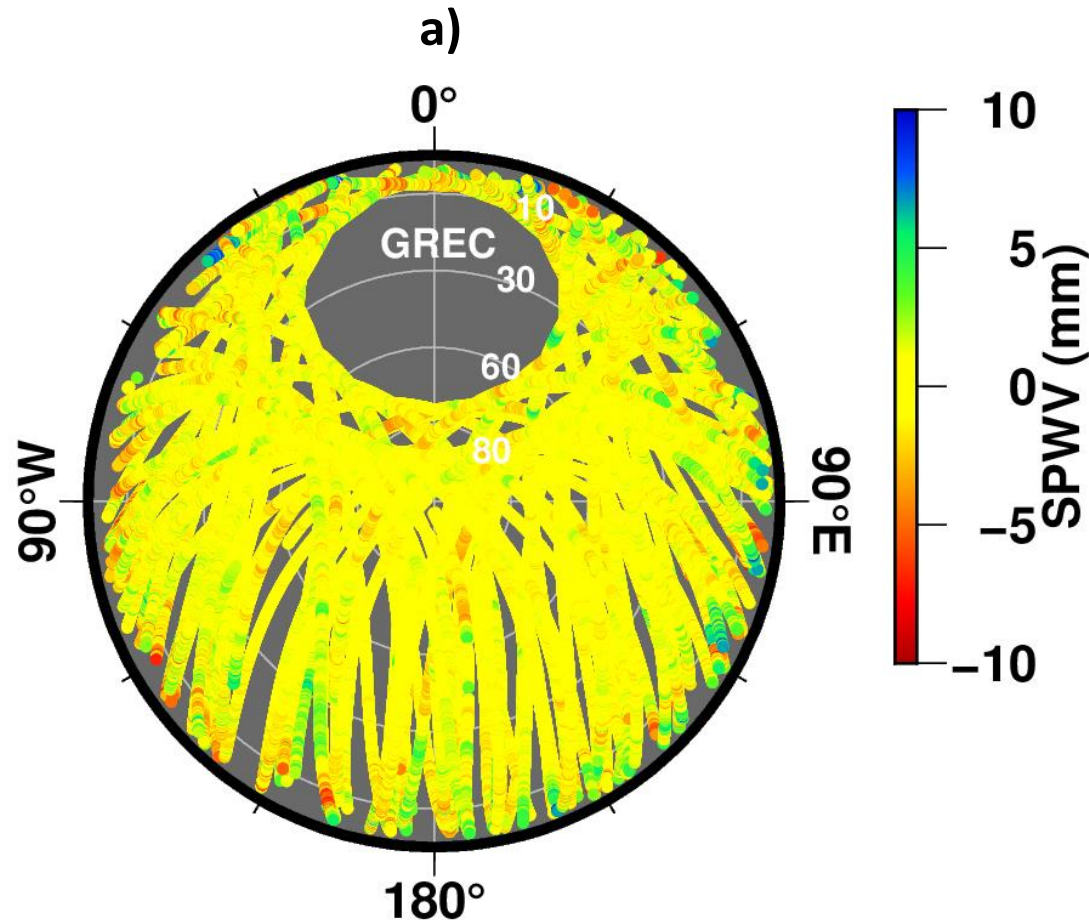


a) SPWV from the multi-GNSS observations corrected for site-specific multipath

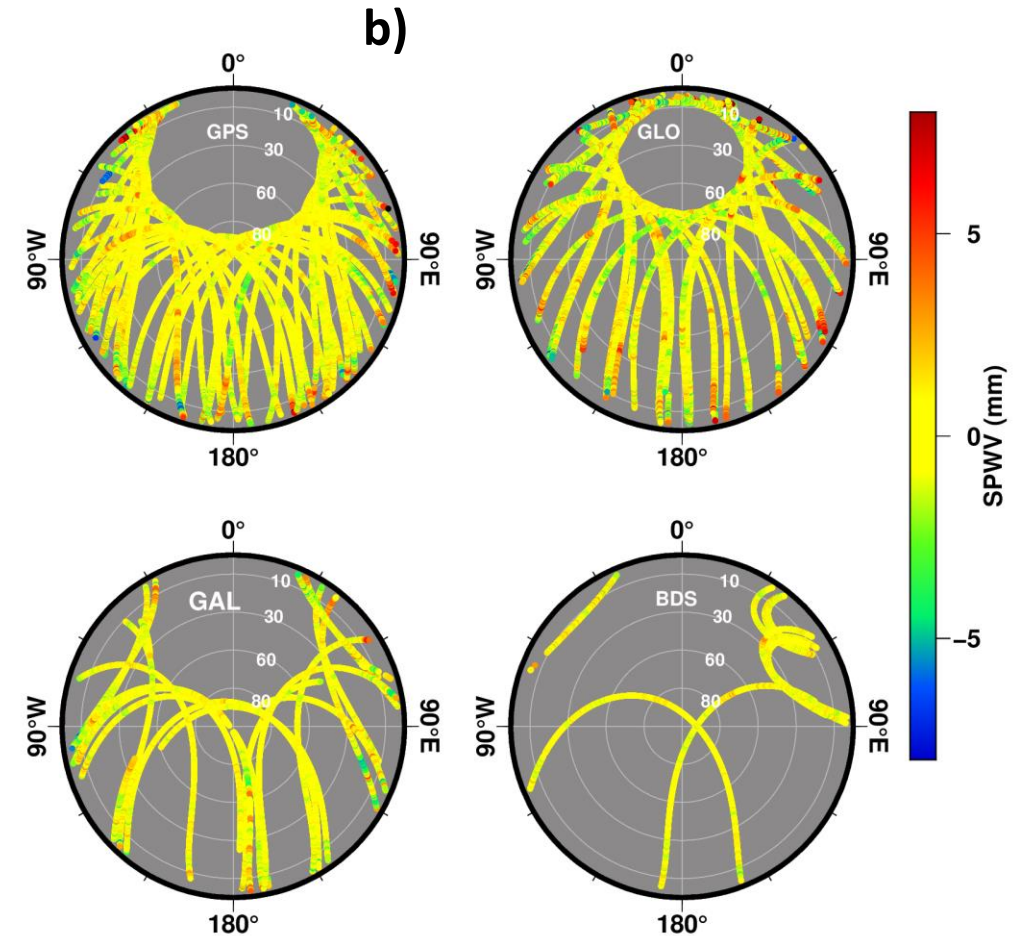


b) SPWV corrected for site-specific multipath from individual GNSS

Slant Precipitable Water Vapour contributions from post-fit carrier phase residuals

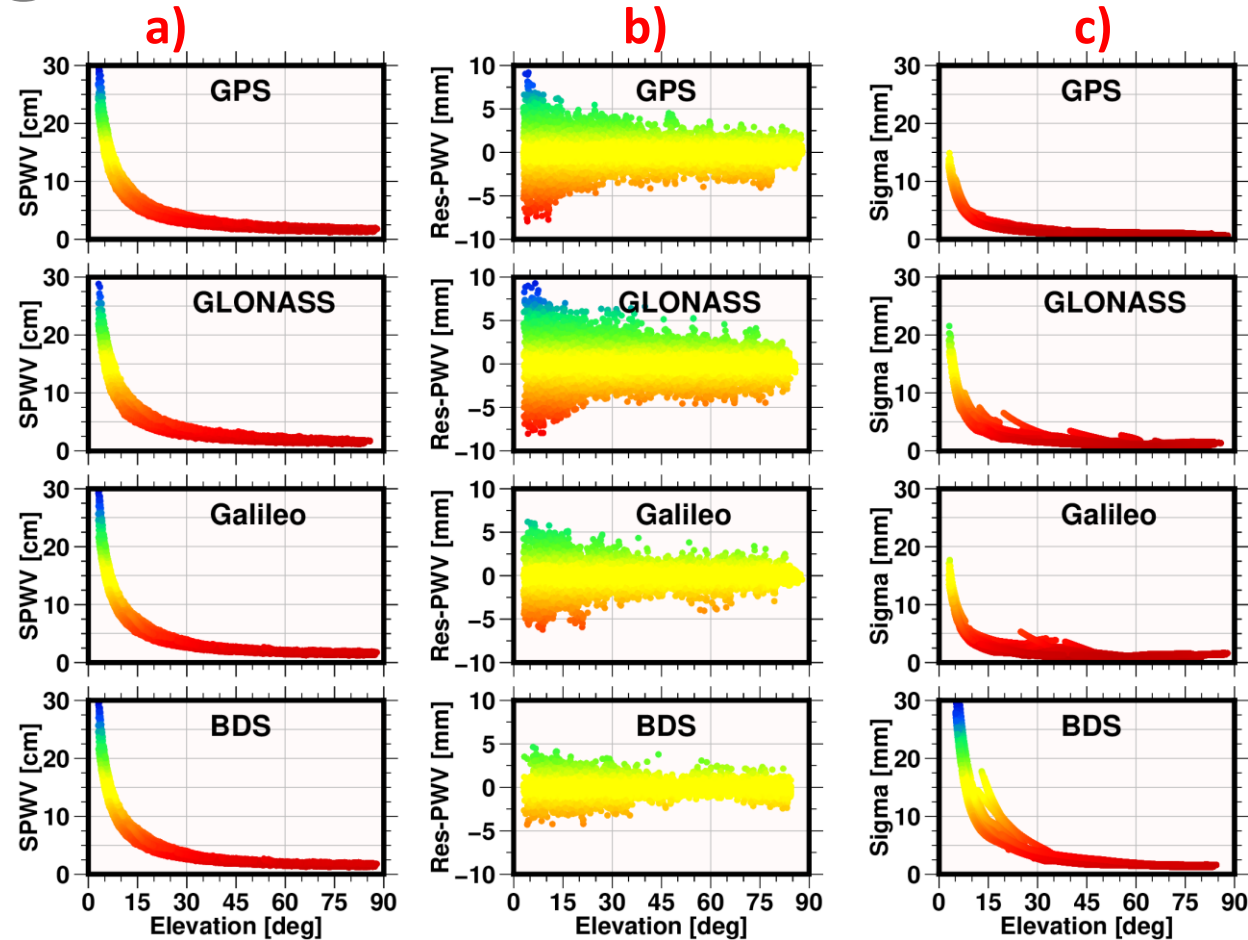


a) Post-fit carrier phase residual contributions to SPWV budget from multi-GNSS observations



b) Post-fit carrier phase residual contributions to SPWV budget from the individual GNSS

Slant Precipitable Water Vapour representations with elevation angles



a) Estimated SPWV from individual GNSS observation, **b)** contributions of post-fit carrier phase residuals to the SPWV budget, and **c)** the standard deviations of SPWV for each GNSS observation

Conclusions

- Multi-GNSS stacking reduce the multipath effects: The amount depends how severely the multipath affects the station
- The residual MPS map RMS improves when GPS+GLONASS+GALILEO+ BDS are combined
- The post-fit residuals contribute to the finer tropospheric information to the slant water vapour budget

Where are we going next?

- Compare the Multi GNSS derived slant water vapour with water vapour radiometer measurements for selected GNSS stations
- Compare space-borne SAR interferometric derived slant water vapour