



## Recent contributions to precise ionospheric, tropospheric and positioning modelling with GNSS

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In this presentation the following contributions to the precise GNSS modelling will be summarized:

a) A new blind technique of multi-TID detection and propagation estimation (ADDTID, [1]) and its applications to characterize the solar eclipse ionospheric footprint [2] and the potential tsunami signatures and potential real-time warnings [3]. ADDTID allows a much more realistic estimation of different MSTIDs, also when there are more than one happening simultaneously. It can mitigate very significantly the MSTIDs impact on the accuracy and convergence time in precise positioning, due to the non-linear baseline dependence of this source of error in precise GNSS positioning.

b) A combined precise tropospheric [4] and receiver atomic clock modelling, the key in particular to very accurately estimate the ground deformation under sudden water-level rise [5].

c) The Wide Area Undifferenced Uncombined Precise Positioning directly supported by Ionospheric Tomography (WAUUPIT) and its potential extension to global scale.

## References

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