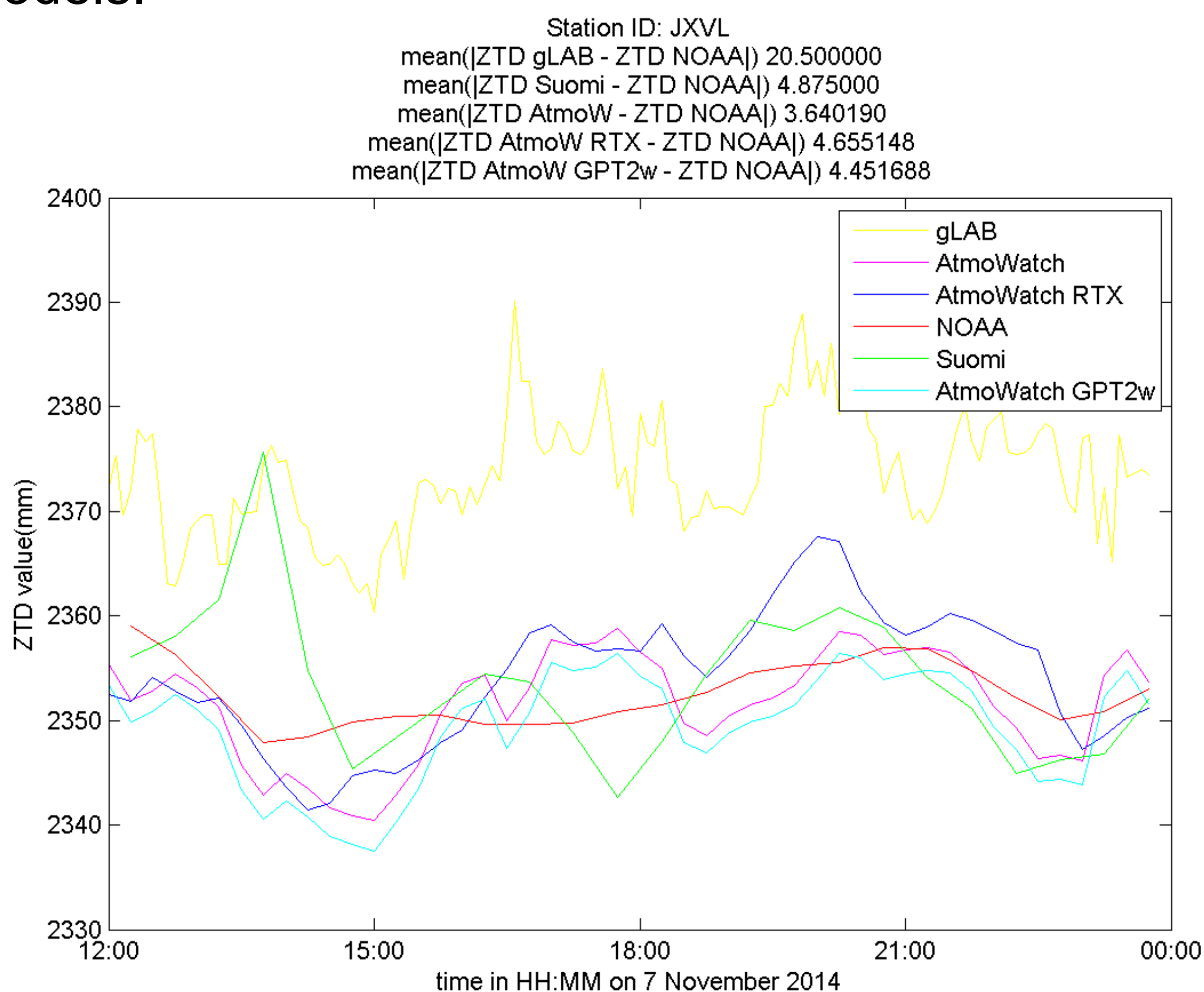


Modeling Tropospheric delay for GNSS Applications

Implementing GPT2w for modeling Tropospheric delay and comparing with existing models

The principle-limiting factor in Global Navigation Satellite System (GNSS) today is the imperfection in modeling of delay experienced by microwaves in propagating through the electrically neutral part of atmosphere, which is usually referred to as tropospheric delay. The goal of this thesis is analyzing different models for troposphere delay estimation for GNSS applications and comparing results of Zenith Total Delay (ZTD) calculated using different softwares. Finally the thesis aims to implement GPT2w (a recently published algorithm to calculate tropospheric delay) and compare it with ZTD values obtained using other existing models.



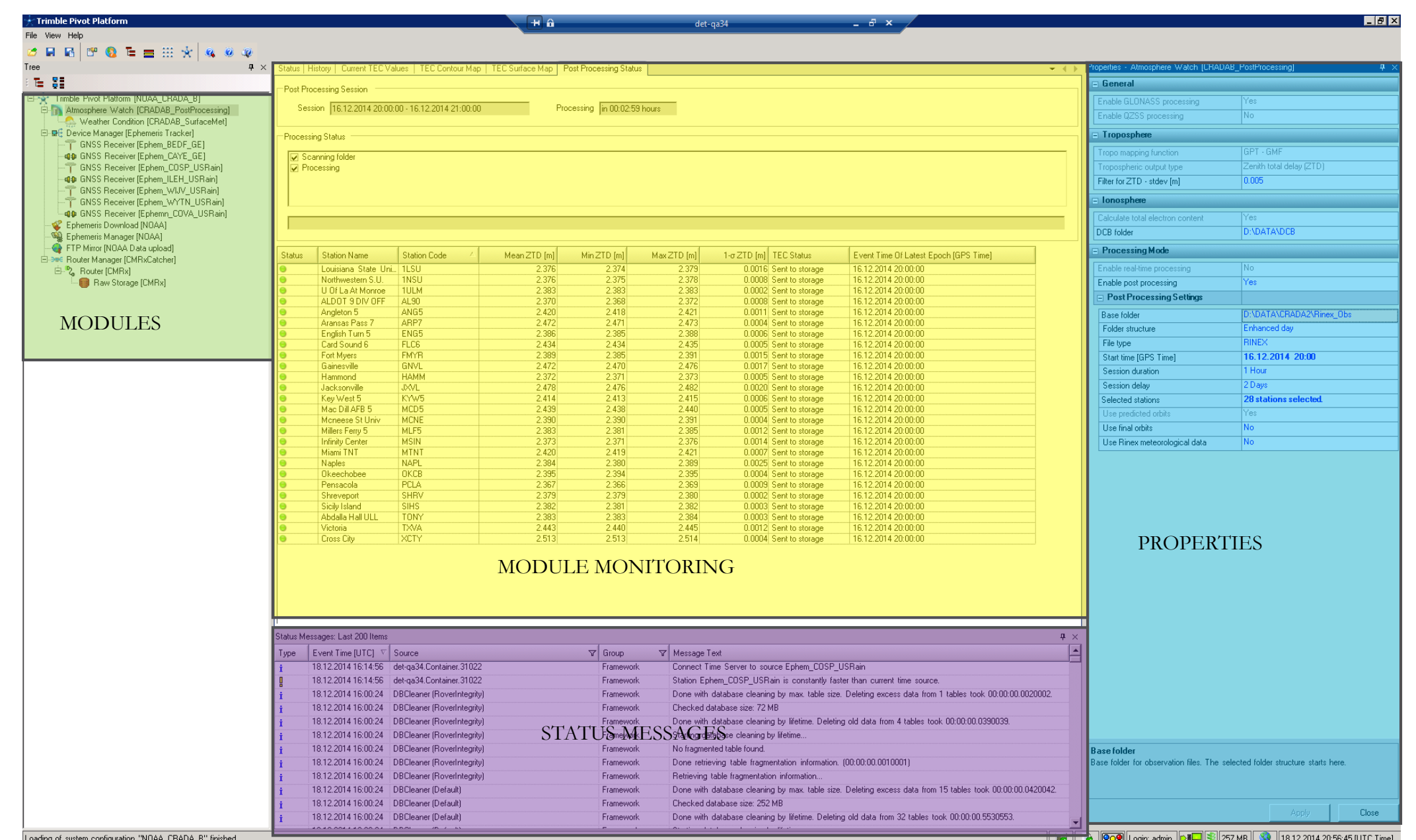
Comparison of ZTD values from different sources

In this thesis GPT2w has been implemented in Trimble Pivot Platform to calculate ZTD, and is compared with existing models in Trimble Pivot Platform like GPT/GMF, UNB3 and Modified Hopfield Model.

Also gLAB is used to compare existing models of Tropospheric delay.

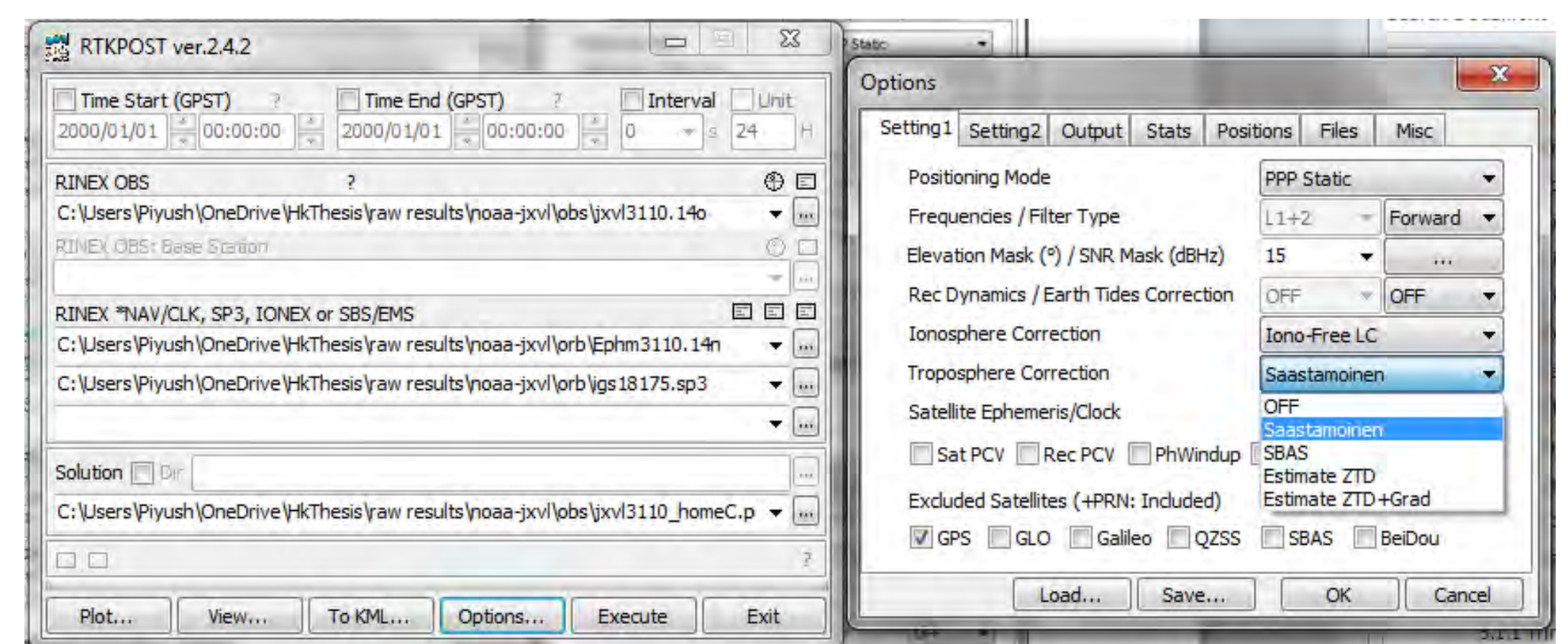


Troposphere delay modeling in gLAB



Trimble Pivot Platform

Finally GPT2w has been implemented in RTKLIB and compared with existing models of tropospheric delay in RTKLIB to check the improvement in positioning for post-processing.



Implementation of GPT2w in RTKLIB