

Exercise 3: Test different modelling approaches with the CONT14 data set

Aim:

- Use the first four sessions of the CONT14 campaign to test the effect of gradient estimation and mapping function modelling.
- Use the metric of baseline length repeatability (BLR) to evaluate the impact of these estimation and modelling choices

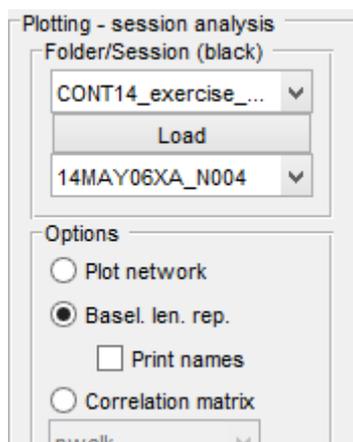
Processing steps

- Use the OPT- and outlier-files from the previous exercise
- Deselect the estimation of gradients in the GUI and run VieVS
- Add output to the plotting window and inspect the difference
- Select a different mapping function and investigate it's influence on the BLR

Processing steps

Inspect BLR from Exercise 2

We will use the results from Exercise 2 as a reference. You can inspect the BLR with the plotting tool. Go to *Plotting/Session analysis* select the folder you chose in Exercise 2 and press *load*. When you select the radio button *Basel. len. rep.* a plot of the BLR should appear. This is our reference.



Analyse sessions without gradient estimation

First, set up VieVS similar to Exercise 2 (load process list and parameter file). Set a directory name (*Run/Run options – Sub-directory for (intermediate) results*) which represents this solution.

Now we have to tell VieVS to not estimate gradients. Go to *Estimation/Least squares/Troposphere* and deselect the check boxes *Estimate north gradients* and *Estimate east gradients*. Press *Save + Run*.

Hint: Use parallel processing to save time.

Inspect BLR

Once you're finished you can add the BLR to the Plot.

First, you have to reload the folders. Go to *File/reload folders*.

Now we add the BLR to the plot. Go to: *Plotting/Session analysis* and select the specified folder in the second panel, press *Load* and select *Add network/BLR*. The BLR of this solution should now appear in the plot with red triangles. You can see the decrease of precision when gradients are not estimated.

Analyse sessions with different mapping function

You can now use the same approach to create a solution with a different mapping function. Go to *Models/Troposphere* and select *GPT3* instead of *VMF1* as mapping function.

Don't forget to set a different sub-directory and turn the gradient estimation on again.

Add the BLR to the plot using the third panel in the plotting tool.