VieVS

Vienna VLBI and Satellite Software

Single Session Analysis using VieVS

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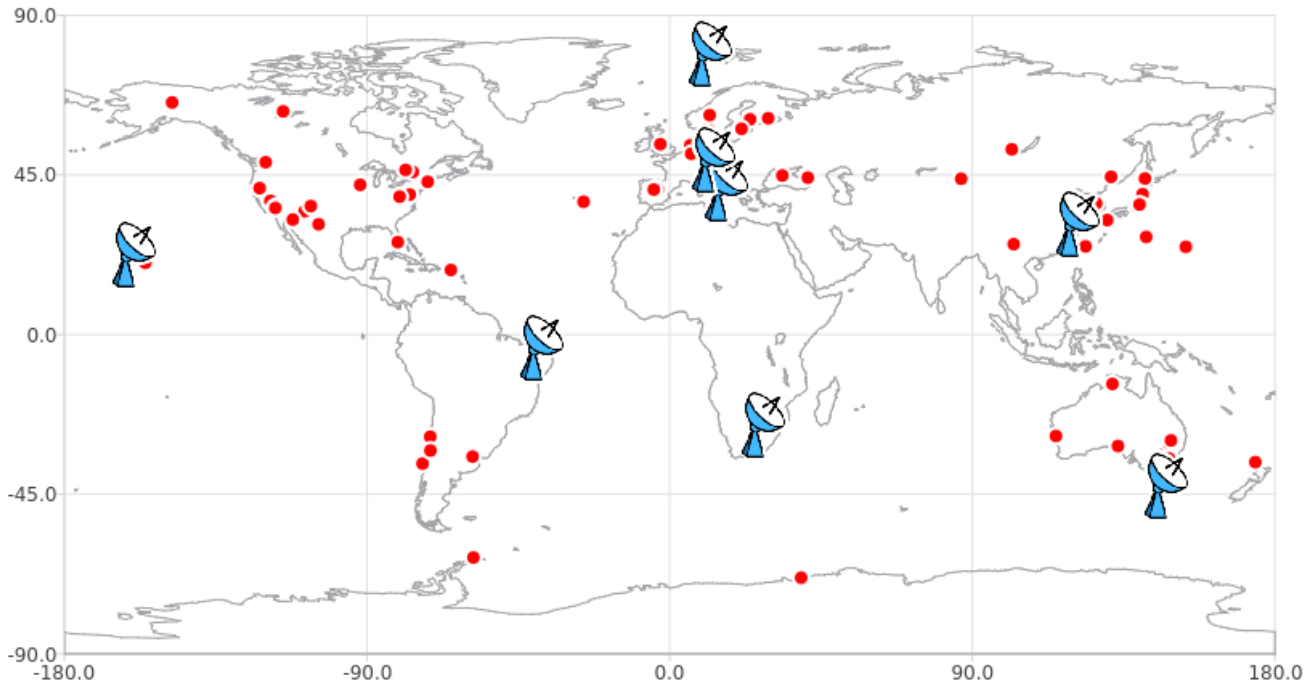
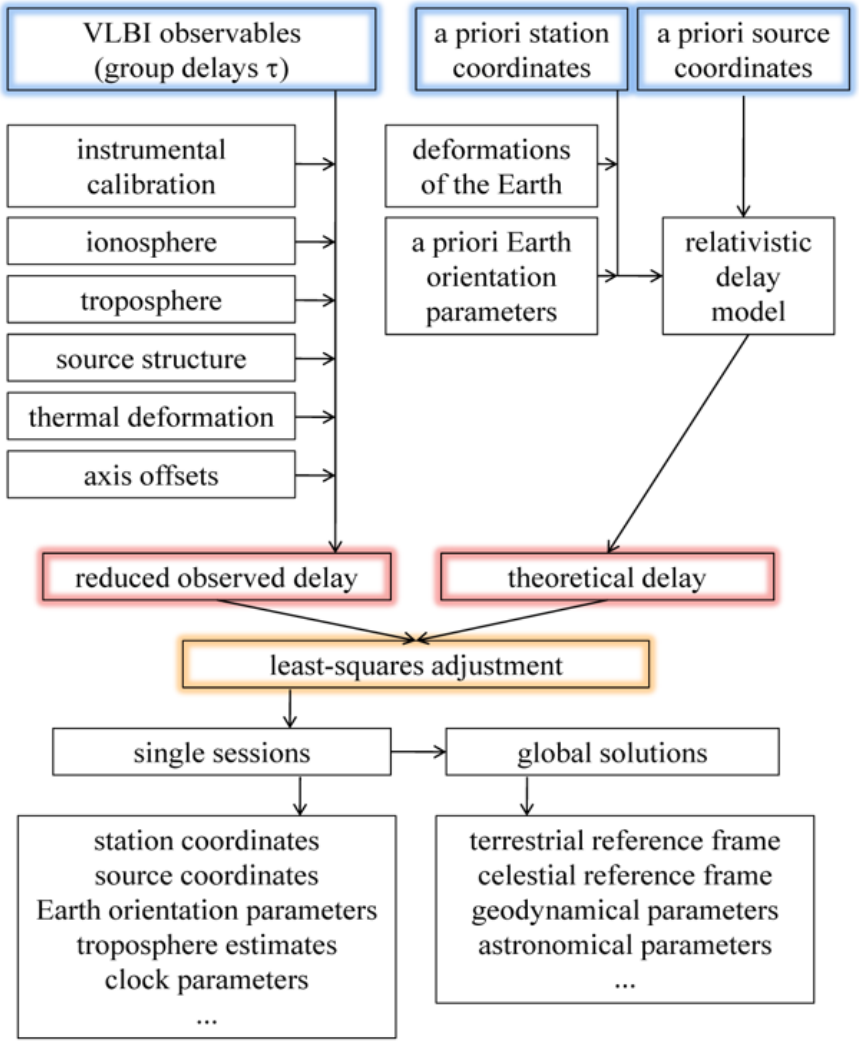
Analyzing R&D session

- IVS-R&D-4
- start date: 08.May.2019 17:30
- 24 hours
- 8 stations



Least Squares Method



Estimation
Least Square Method

- Troposphere
- Clock
- EOP
- Station coordinates
- Source coordinates

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Continuous Piecewise Linear Offsets (PWLO)

- we estimate parameters every **X** minutes
- linear interpolation in between

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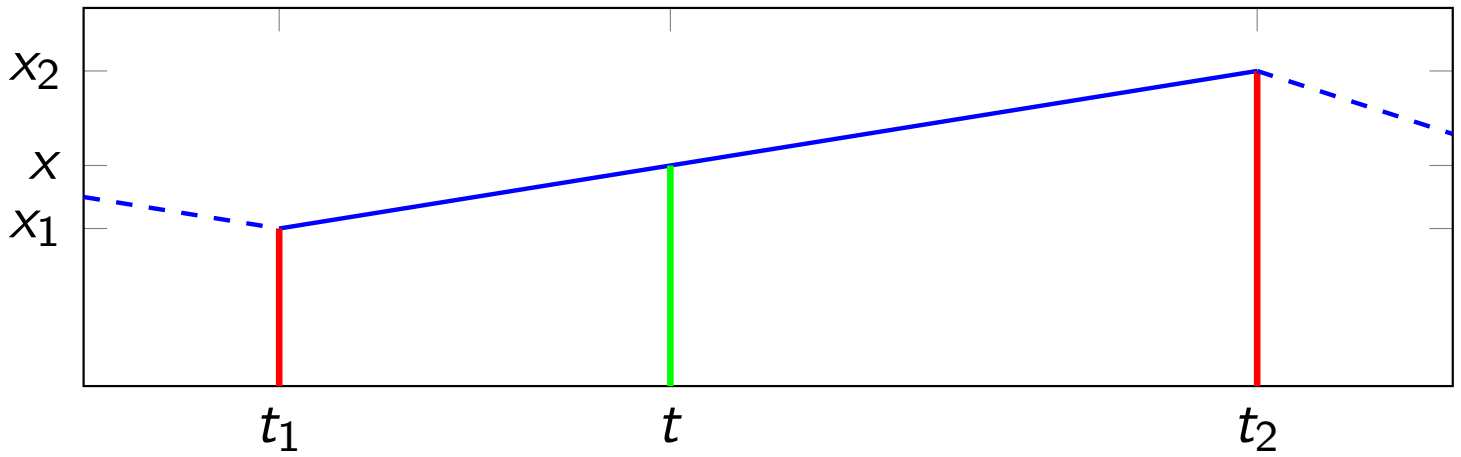
$$x(t) = x_1 + \frac{t - t_1}{t_2 - t_1}(x_2 - x_1)$$

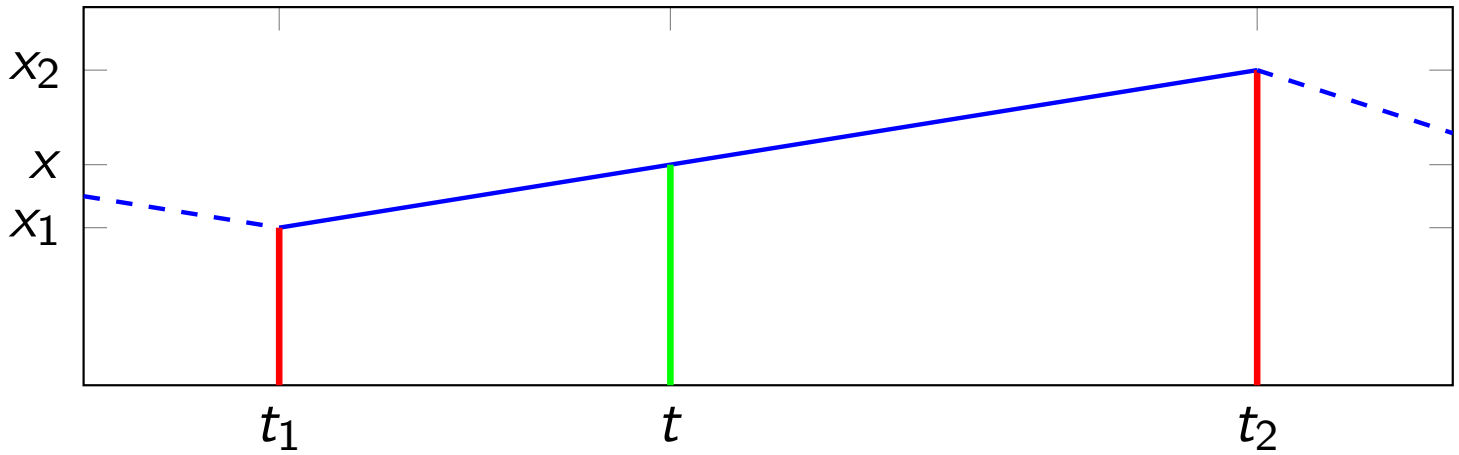


Estimation constraints

To avoid singularities and improvement

constraints

- pseudo observations
- $zwd_{03:00} = zwd_{04:00} \underbrace{\pm 1.5\ [\text{cm}]}_{constraint}$



Iterative LSM

First solution

- reduced number of parameters
- clock approximated as only one offset, one rate & one quadratic term

$\rightarrow$ look at first solution to detect clock breaks!

Main solution

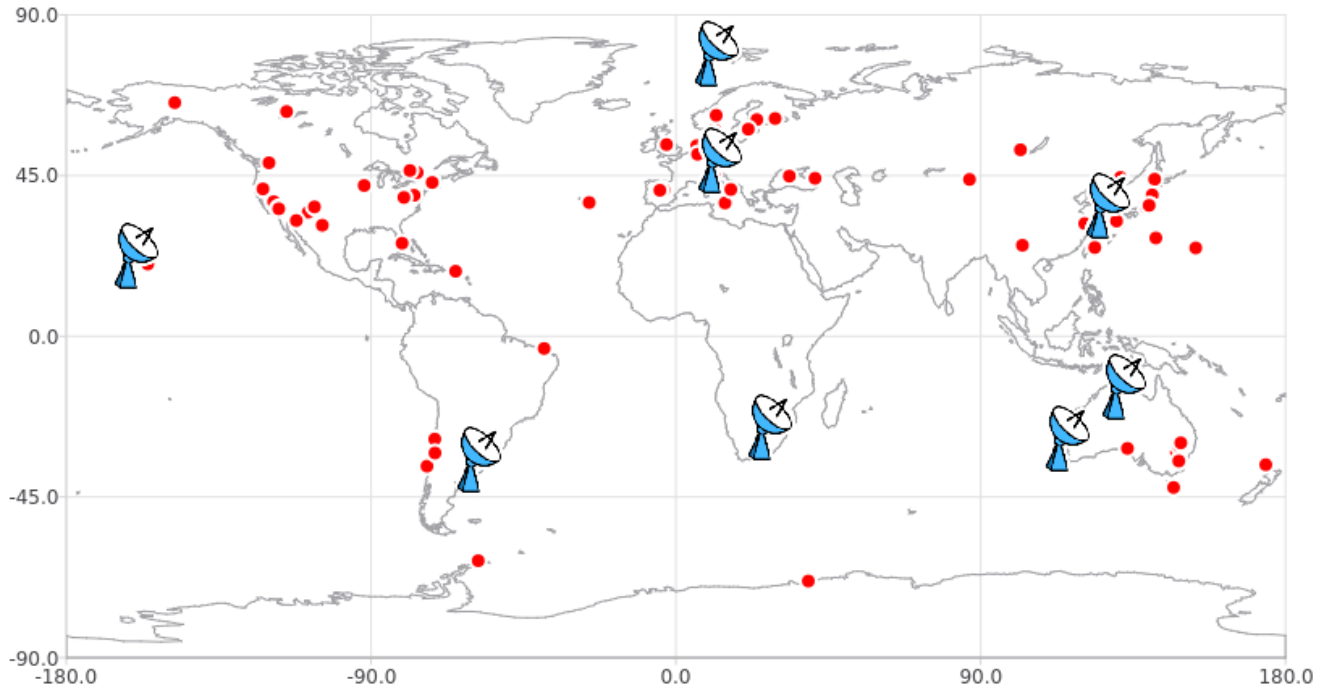
- use results from first solution as new a priori values
- estimate main solution with all parameters as PWLO

Output

- plot estimated parameters using VieVS
- data stored in Matlab structure
  - *"x_*"* MATLAB structure in *VieVS/VLBI/VLBI/DATA/LEVEL3/...*
  - contains all estimates → further analysis
- SINEX file
  - standarized output format for geodetic parameters
  - used for distribution of products and estimates

Analyzing R1 session

- IVS-R1885
- start date: 11.March.2019 17:00
- 24 hours
- 8 stations



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Single Session Analysis

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