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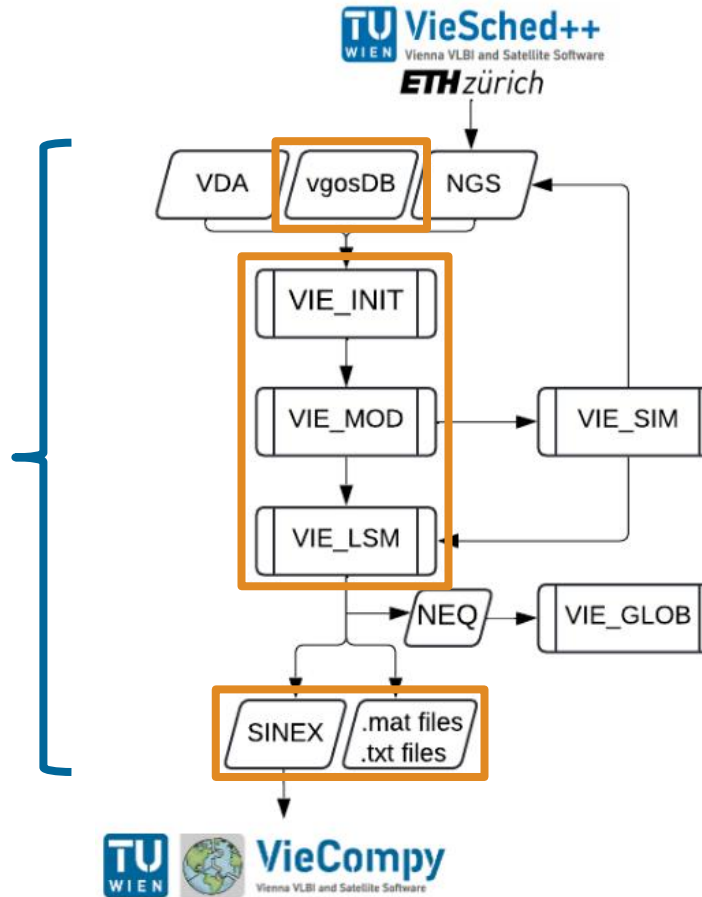
VieVS
Vienna VLBI and Satellite Software

Single Session Analysis in VieVS-VLBI

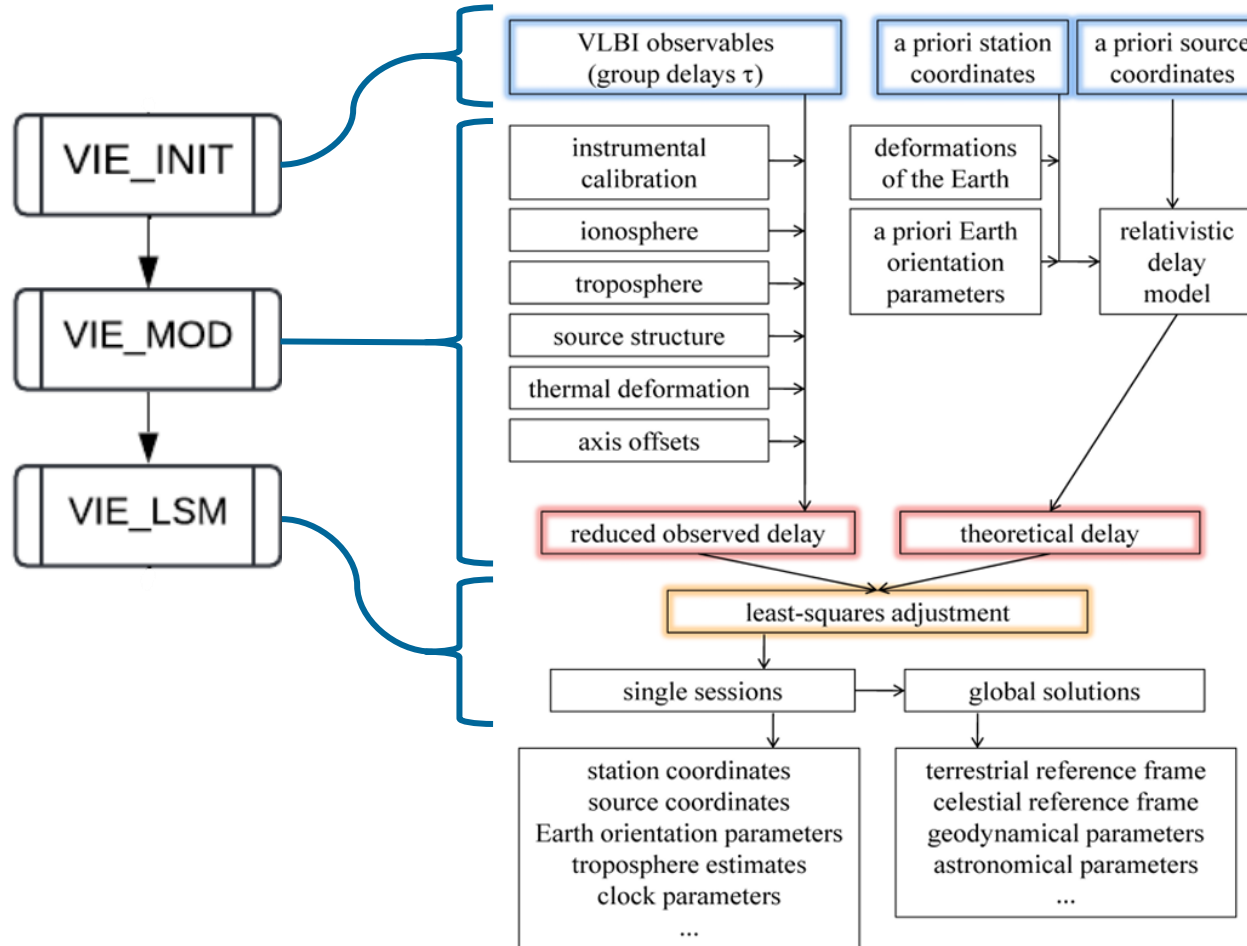
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VieVS Days - September 2026

VieVS-VLBI



Single
Session
Analysis



First solution

- reduced number of parameters
 - clock approximated as only one offset, one rate & one quadratic term
- look at first solution to detect clock breaks!

Main solution

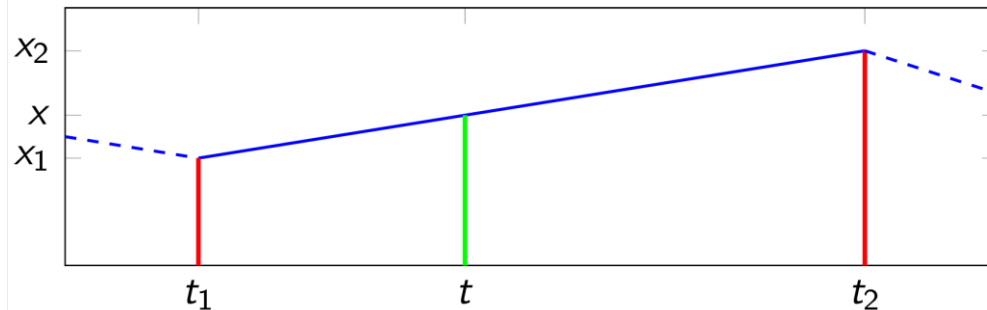
- use results from first solution as new a priori values
- estimate main solution with all parameters as PWLO

- EOPs
- Per station:
 - Coordinates
 - Clock
 - Troposphere
- Source coordinates

Continuous Piecewise Linear Offsets (PWLO)

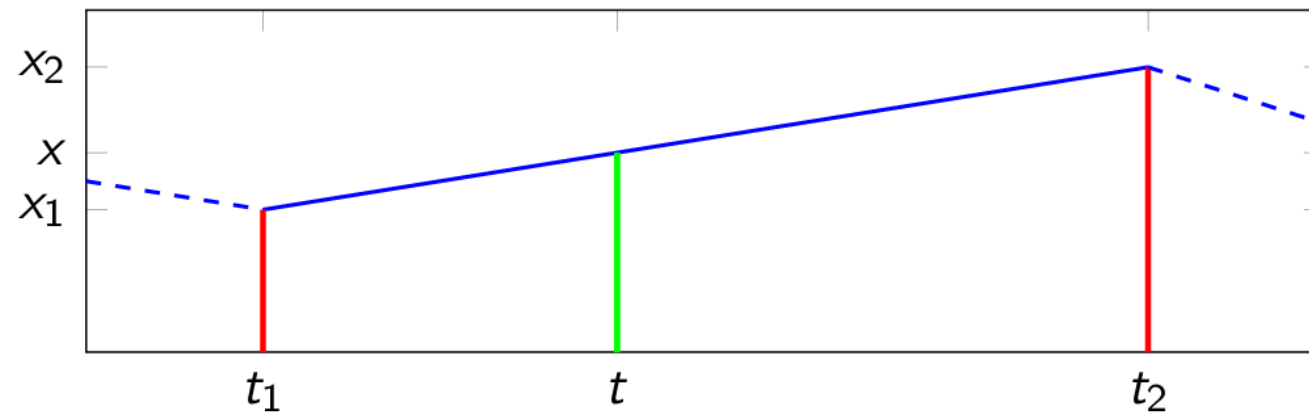
- we estimate parameters every **X** minutes
- linear interpolation in between

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



To avoid singularities and improvement
constraints

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



Basic Single Session Analysis

load
session(s)

model &
estimation
settings

run
analysis

baseline
dependent
clock offsets

plot
residuals

reference
clock

Improvements if necessary

identify problems:

- residuals
- analysis report

solve problems: OPT file

- clock breaks
- bad cable calibration, stations, sources, baselines, ...

Session to be Analyzed

- IVS-t2p180
- Start: 02/24/2026 5:30 pm
- Duration: 24 h
- 12 stations

