





# External tropospheric files in VieVS

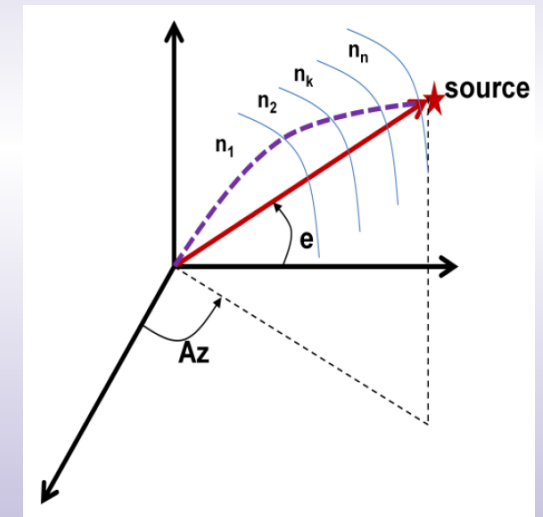
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**VieVS User Workshop**  
**14 – 16 September, 2011**  
**Vienna**



# External tropospheric files

-  Tropospheric delays in one txt file per session
-  Different models available
-  Easy exchangeability
-  Use of own data possible

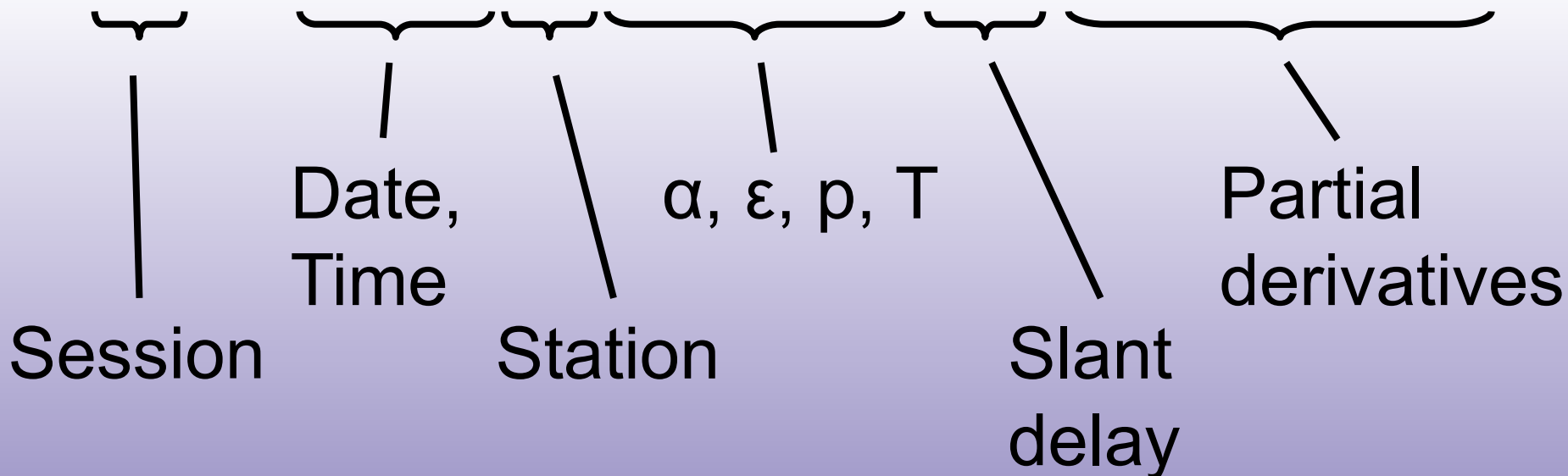


# Content of .trp files

```

0 $08AUG12XA 1 2008.08.12-00:00:10.0 TSUKUB32 267.22217 32.83763 1010.5 27.9 1.5683274e-008 1.8414883e+000 -1.3806082e-001 -2.8454188e+000
0 $08AUG12XA 1 2008.08.12-00:00:10.0 WETTZELL 96.94537 28.11146 935.5 15.9 1.6181319e-008 2.1182503e+000 -4.7833716e-001 3.9266933e+000
0 $08AUG12XA 1 2008.08.12-00:00:10.0 SVETLOE 119.17749 33.90588 1007.4 18.6 1.4284168e-008 1.7906143e+000 -1.2967475e+000 2.3223981e+000
0 $08AUG12XA 1 2008.08.12-00:00:10.0 ZELENCHK 118.82887 48.42118 879.5 20.8 9.5710644e-009 1.3362900e+000 -5.7132658e-001 1.0380001e+000
0 $08AUG12XA 1 2008.08.12-00:00:10.0 ONSALA60 100.33880 26.30473 1001.2 17.0 1.8172618e-008 2.2514722e+000 -8.1515716e-001 4.4683167e+000
0 $08AUG12XA 1 2008.08.12-00:00:10.0 NYALES20 109.44378 20.67074 995.0 2.5 2.1822288e-008 2.8224172e+000 -2.4786993e+000 7.0215197e+000
0 $08AUG12XA 1 2008.08.12-00:00:10.0 HARTRAO 55.17440 24.48236 868.7 4.0 1.6270544e-008 2.4080215e+000 3.0087907e+000 4.3249582e+000
0 $08AUG12XA 2 2008.08.12-00:00:13.0 KOKEE 125.41518 34.88015 890.5 19.3 1.2221656e-008 1.7470804e+000 -1.4499862e+000 2.0391843e+000
0 $08AUG12XA 2 2008.08.12-00:00:13.0 WESTFORD 227.33333 20.86067 994.7 16.3 2.2472779e-008 2.7978737e+000 -4.9525056e+000 -5.3732464e+000
0 $08AUG12XA 3 2008.08.12-00:02:27.0 TSUKUB32 308.05014 33.90338 1010.5 27.9 1.5248142e-008 1.7904042e+000 1.6395823e+000 -2.0947886e+000
0 $08AUG12XA 3 2008.08.12-00:02:27.0 WETTZELL 72.72024 57.42382 935.4 16.1 9.0816080e-009 1.1864304e+000 2.2510831e-001 7.2363974e-001
0 $08AUG12XA 3 2008.08.12-00:02:27.0 SVETLOE 108.61745 67.22917 1007.4 18.6 8.6632933e-009 1.0844289e+000 -1.4530395e-001 4.3132740e-001
0 $08AUG12XA 3 2008.08.12-00:02:27.0 ZELENCHK 67.01852 74.60076 879.5 20.8 7.4324686e-009 1.0371982e+000 1.1153176e-001 2.6298863e-001
0 $08AUG12XA 3 2008.08.12-00:02:27.0 ONSALA60 85.11058 58.45999 1001.2 17.1 9.4904133e-009 1.1730831e+000 6.1351386e-002 7.1718921e-001




```



# Steps

1. Tropospheric parameter file  
→ What models to be used ?
2. External tropospheric file (.trp)  
→ For which session(s) ?
3. Use in VieVS  
→ Process session(s)

# Tropospheric parameter file (1)

-  Created via GUI
-  Defines models for all stations
-  Run *TRP\PROGRAM\GUI\createTropoParameterFilesGUI.m*

Tropospheric parameterization interface

Load tropospheric-parameter-file:  browse load

Save tropospheric-parameter-file:  browse save

Check while editing table

station	raytr	p0	ECMWFh	GPT	VMF1h	GMFh	ECMWFw	VMF1w	GMFw	DAO	APG	LHGh	c (m)	LHGw	c (m)	VMF1w	GMFw	1/sin(e)	c
1	AIRA	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
2	ALGOPARK	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
3	BADARY	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
4	BLKBUTTE	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
5	BR-VLBA	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
6	CHICH10	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
7	CRIMEA	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
8	CTVASBAY	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
9	CTVASTJ	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
10	DEADMANL	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
11	DSS15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
12	DSS45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
13	DSS65	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
14	DSS65A	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
15	EFLSBERG	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
16	ELY	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
17	FD-VLBA	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
18	FLAGSTAF	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
19	FORT ORD	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
20	FORTLEZA	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
21	FORTORDS	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
22	GGA07108	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
23	GFU11	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
24	GFU3	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1
25	GILCREEK	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1

+ add station    sort    set column to     ?

- delete station

# Tropospheric parameter file (2)

- Set tropospheric models for all stations (1 | 0)
- Save textfile

Tropospheric parameterization interface

Load tropospheric-parameter-file:  browse load

Save tropospheric-parameter-file:  browse save

Check while editing table

	station	raytr	p0	ECMWFh	GPT	VMF1h	GMFh	ECMWFw	VMF1w	GMFw	DAO	APC	LHGh	c (mf)	LHGw	c (mf)	VMF1w	GMFw	1/sin(e)	c
1	AIRA	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
2	ALGOPARK	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
3	BADARY	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4	BLKBUTTE	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5	BR-VLBA	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
6	CHICH10	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7	CRIMEA	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8	CTVASBAY	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
9	CTVASTJ	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
10	DEADMANL	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
11	DSS15	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
12	DSS45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
13	DSS65	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
14	DSS65A	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
15	EFLSBERG	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
16	ELY	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
17	FD-VLBA	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
18	FLAGSTAF	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
19	FORT ORD	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
20	FORTLEZA	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
21	FORTORDS	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
22	GGAO7108	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
23	GIFU11	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
24	GIFU3	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1
25	GILCREEK	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	1

+ add station    sort    set column to     ?

- delete station

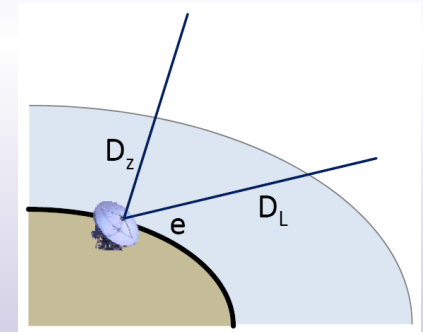
# Models for tropospheric files

- ▣ Delay
  - ▣ ECMWF (h/w)
  - ▣ Surface pressure
  - ▣ Global Pressure and Temperature

- ▣ Partial derivatives
  - ▣ VMF1w
  - ▣ GMFw

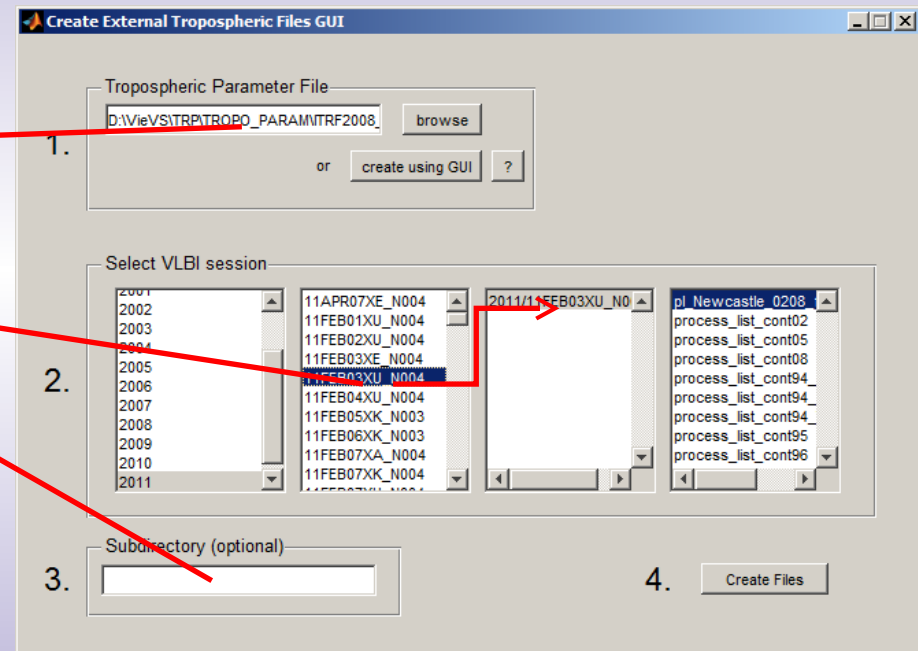
- ▣ Mapping Functions
  - ▣ VMF1
  - ▣ GMF

- ▣ Gradients
  - ▣ LHG
  - ▣ DAO
  - ▣ APG



# External tropospheric files



1. Define (just created) parameter file
2. Select stations
3. Choose subfolder
4. Click „Create“



→ \TRP [\subfolder] \\*.trp



# Note

-  Session must be processed before once
-  Read log (Command Window) for information

```
Command Window
New to MATLAB? Watch this Video, see Demos, or read Getting Started.

===== LOG (02.09.2011 12:39) =====





0 file(s): successfully created

1 file(s): No antenna struct found (-> process session with VieVS)
          2011/11JUN06XU_N004

===== END LOG =====

Elapsed time is 0.773606 seconds.
```

# Use files in VieVS

-  GUI vie\_mod
-  Click „External (.trp) file“
-  Select subfolder (if chosen)
-  Delays are applied

