

# EGSIEM

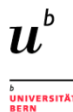
European Gravity Service for Improved Emergency Management

Title: **WP2 Gravity field analysis**

Presenter: TMG and all ACs

Affiliation: TUG

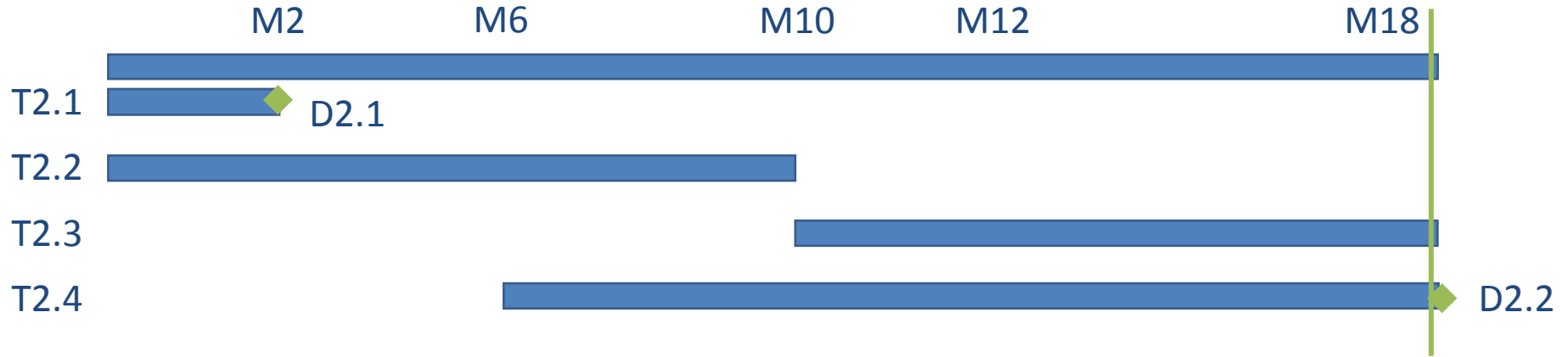
EGSIEM Meeting Potsdam,  
02.06.2016 - 03.06.2016



Leibniz  
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# WP2 Gravity field analysis – Time Table



T2.1 Processing Standards and Models

T2.2 Improved processing tools

T2.3 Data analysis

T2.4 Instrumental behavior and End-to-end Simulator

## T2.3 Reprocessing

- Reprocessing of two years (2006 – 2007) of GRACE data
  - AIUB
  - GFZ
  - TUG
  - CNES/GRGRS
  - ULux
- Based on document  
D2.1\_Processing Standards and Models\_02.03.2015.pdf
- Based on AIUB GPS orbit and clock constellation  
or AIUB kinematic orbits
- 5 x 24 monthly normal equations in SINEX format
- What is about the additional Level 2 products: GAA, GAB, GAC, GAD ?

# T2.3 Reprocessing: SINEX format

```
%=SNX 2.02
+FILE/REFERENCE
+FILE/COMMENT
+SOLUTION/STATISTICS
+SOLUTION/NORMAL_EQUATION_VECTOR
+SOLUTION/NORMAL_EQUATION_MATRIX U
+SOLUTION/ESTIMATE
+SOLUTION/APRIORI
%ENDSNX
```

Should contain the ICGEM header  
**earth\_gravity\_constant**  
**radius**  
**max\_degree**  
**tide\_system**

All information are related to the reduced observations

Must be added to **SOLUTION/ESTIMATE** to get the full solution

Monthly mean of all/standard background models

- static, trend, (semi-) annual
- AOD1B
- Earth-, ocean-, pole tides

## T2.3 Reprocessing: Apriori

APRIORI includes the reduced static gravity field, trend, annual, semiannual signal

Tides not included, AOD1B not included

- ⇒ Result is standard GSM file
- ⇒ Need also the combination of different GAA - GAD files

All centers should provide monthly mean of all reduced background models (ICGEM-format) for internal consistency check

- Earth tides, Pole tides, Ocean tides, Ocean pole tides
- Atmosphere, Ocean

TUG: ITSG-Grace2016 public available  
([ifg.tugraz.at/itsg-grace2016](http://ifg.tugraz.at/itsg-grace2016))

- Normal equations (degree 90) in SINEX for all months 2002-2016
- Monthly mean of all background models