Summary

- GPS high resolution IONEX maps over Europe (Krankowski et al):

    – Possibly input to phasescreens

    – Input to LOFAR polarization calibration (Faraday Rotation/Long baselines)

    – Real Time (15 min delay): Use in UHEP trigger (Cosmic Rays)

- Time Line

    – first checks july: select dates

    – face to face meeting september

    – publication start 2017: Comparing different models using LOFAR data

    – HBA phase screens tests:

        - precalibrate including GPS TEC:september...

        - get test data from surveys: june

Diagnostics

- Question: Can we use external ionospheric data to decide on calibrate-ability of specific LOFAR observations?

- Use high spatial resolution RAW GPS data to create structure functions

    - timeline:

        - list of dates: june

        - maaijke → mariusz: july-september

- Unusual events in satellite data → compare to LOFAR

    - timeline:

        - Hanna: dates of availability: June

        - Manu/Huib: select LOFAR data: July

        - july: skype meeting

Diagnostics

- Use LOFAR beamlet calibrator data (LBA) define figure of merit (FOM):

- time line:
  – beamlet analysis Richard: August

  – FOM from calibration parameters: Francesco July

  – provide many calibration parameters (LBA/HBA) to mariusz 5s resolution

  – september/october meeting

- Use IDCE catalog for diagnostics:
  – compare good/bad data

  – automatically add the link to LOFAR observations

  – time line:
    - start-2017

Prediction

- Use scintillation data to predict "bad" nights

  Marcin/Biagio 2017

Use LOFAR data

- 2nd,3rd order effects in TEC from LOFAR calibration parameters (Faraday Rotation, very low frequency LBA 1/nu^3 term):
  - low frequency, determine scales (Biagio Forte, M. Hernandez-Pajares,Mevius, deGasperin)
  - time line: September face to face meeting
- Use Polish LOFAR data in a multi-instrument monitoring: Richard → Hanna
  - publication 2017
- Setup an experiment like NLR/LOFAR tracking GNSS satellites with Polish LOFAR stations,

Use LOFAR data

- Compare LOFAR large scale gradients (Dutch LOFAR) with radio occultation data

  – Barbara,Maaijke 2017

- Use the auto-correlation data to investigate scintillation physics: Biagio

  – September/October

- use triangulation methods on LOFAR phases?

  – high time resolution (1s)

  – input to ionopheric modeling

  – possible use for LOFAR diagnostics

  – mariusz

Publication,proposals,funding, conferences

- European Space Weather week Ostend Nov 2016 (Hanna,Andrzej)

- Low Frequency workshop Bologna, June 2017

- URSI Canada 2017

- SKA Goa November 2016 (Huib, Francesco)

- horizon2020, networking, Marie Curie, space call 2017
  – Hanna, Andrzej, Biagio,Richard,Manu

- Next Workshop: Leiden april 2017
  – coordination: Richard Maaijke Manu