



EUREF 2018 SYMPOSIUM

AMSTERDAM 30 May – 1 June 2018



National report of Belarus

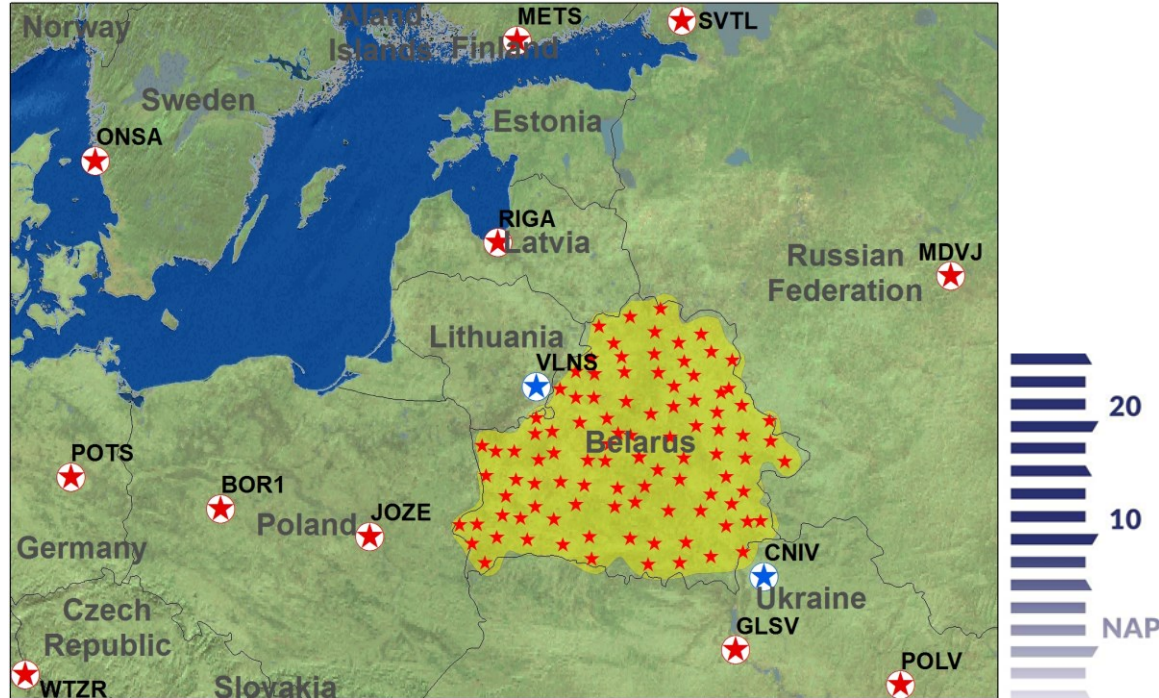
Dr.N. Rudnitskaya, S. Zabagonskiy

The State Enterprise “Belgeodesy”

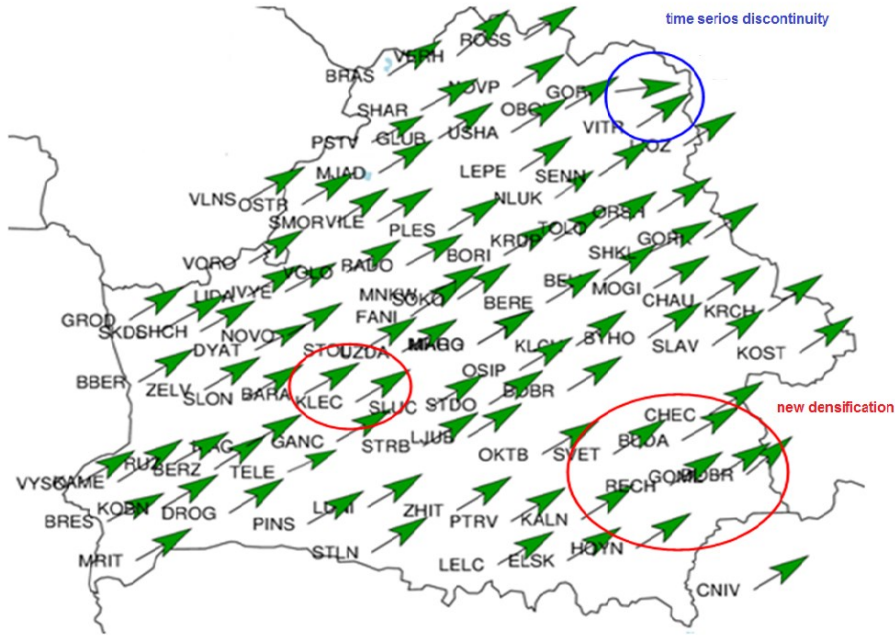


Belorussian positioning service

- **99 CORS**
- Average distance between the stations is **50 -70 km**
- GNSS equipment :
 - ✓ **receivers: LEICA GR10, LEICA GRX1200+GNSS**
 - ✓ **antennas: LEIAR25.R4 LEIT, LEIAR10 NONE, LEIAT504GG LEIS**
 - ✓ **Software – GNSS Spider, v4.3. Leica Geosystems**
- Positioning accuracy in real time is about 2 cm in plane and 3 cm in height



Belorussian positioning service



Velocities estimation

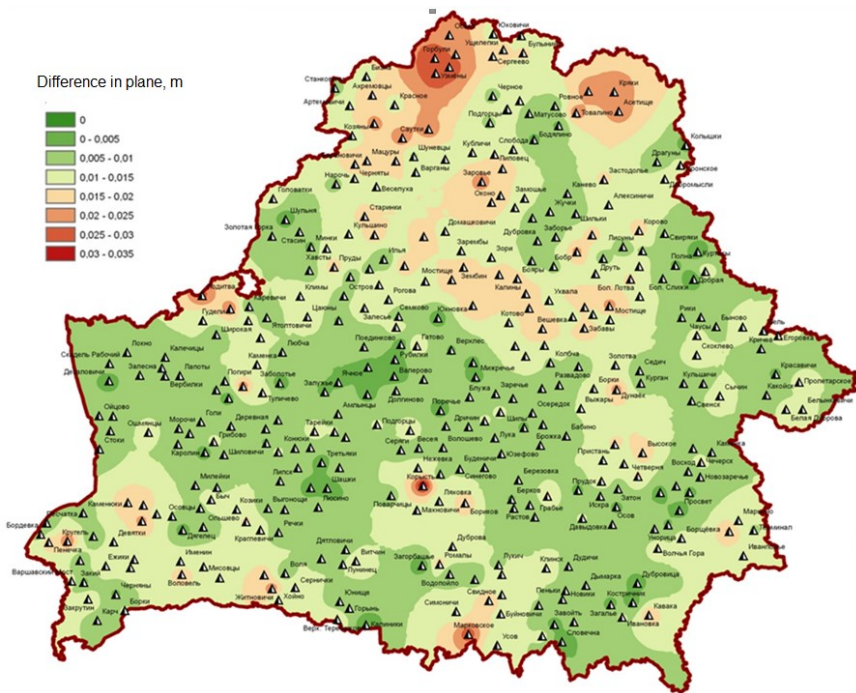
Note: last CORS were created two years ago

- CORS coordinates are calculated by BERNES 5.2 in according with “Guidelines for EUREF Densifications”
- **99** Belorussian CORS, **11** IGS reference points and **2** nearest EPN stations are included in daily network solution permanently
- Stability control – continuous post-processing with creation of a time series
- Verification of consistence between active and passive parts of the State geodetic network

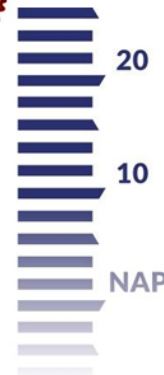
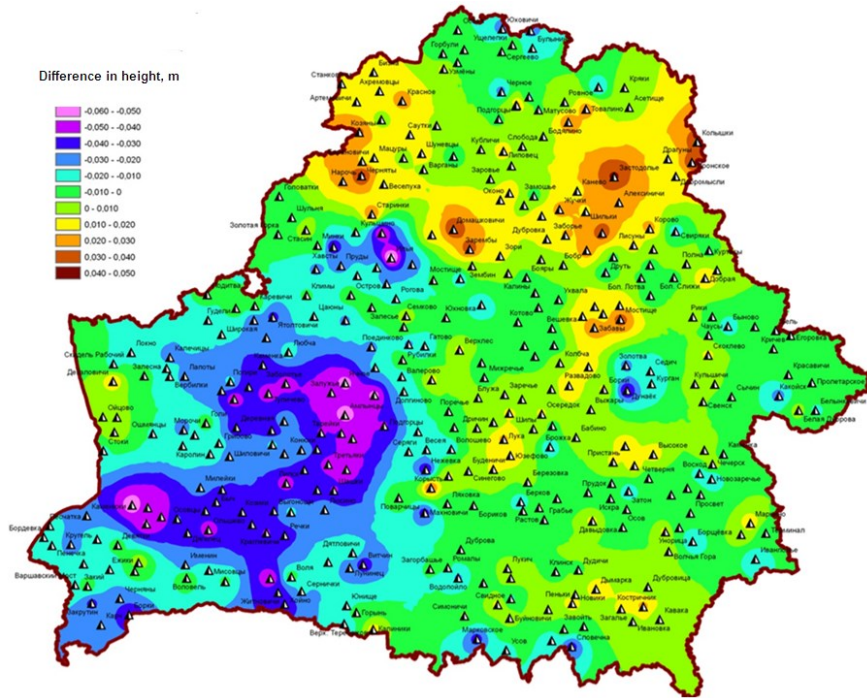


Consistence between active and passive parts of the State geodetic network

Difference in plane, m



Difference in height, m



Inconsistence in height will be eliminated in nearest time (new observations + adjustment with absolute antenna calibrations)

Local coordinate systems

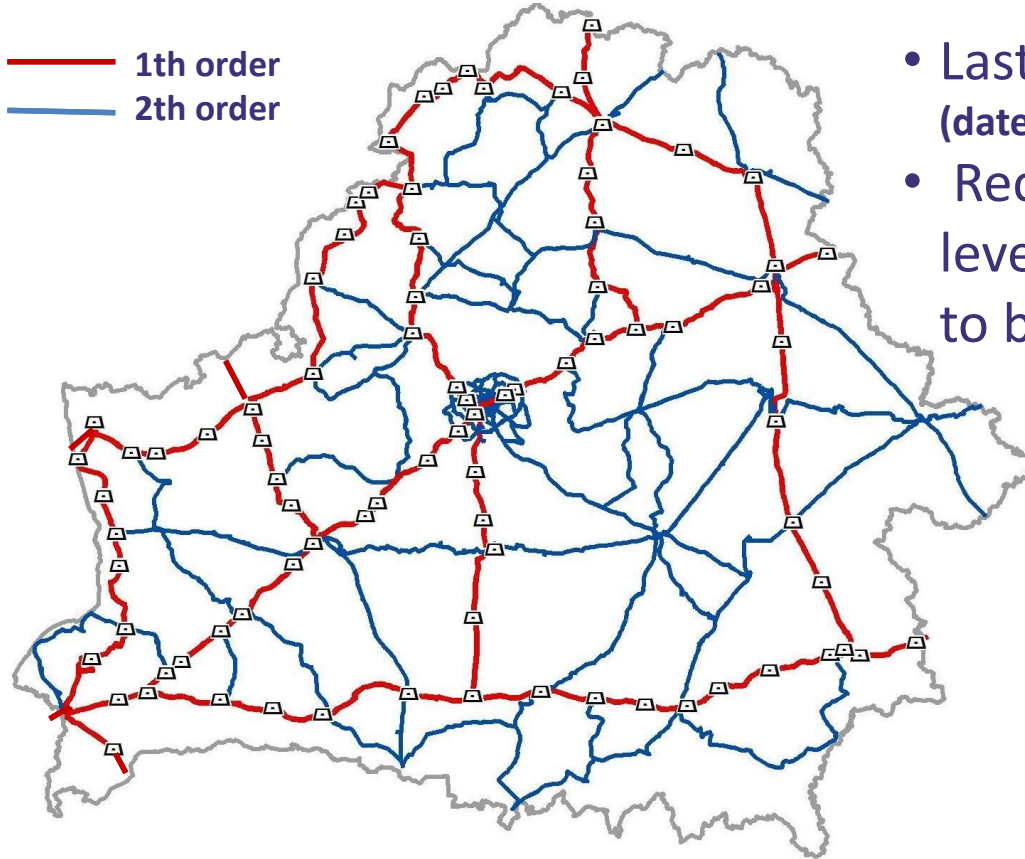
206 local coordinate systems

- **2010-2016** – revision of the local coordinate systems had been carried out for reveal of significant deformations in the local geodetic networks. To date this work has been finished
- Upon detection of the deformations – they are eliminated in a different way



State leveling network

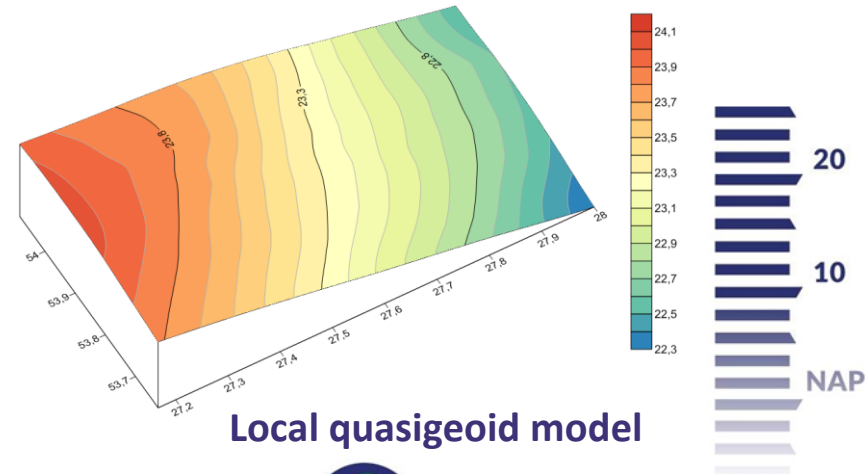
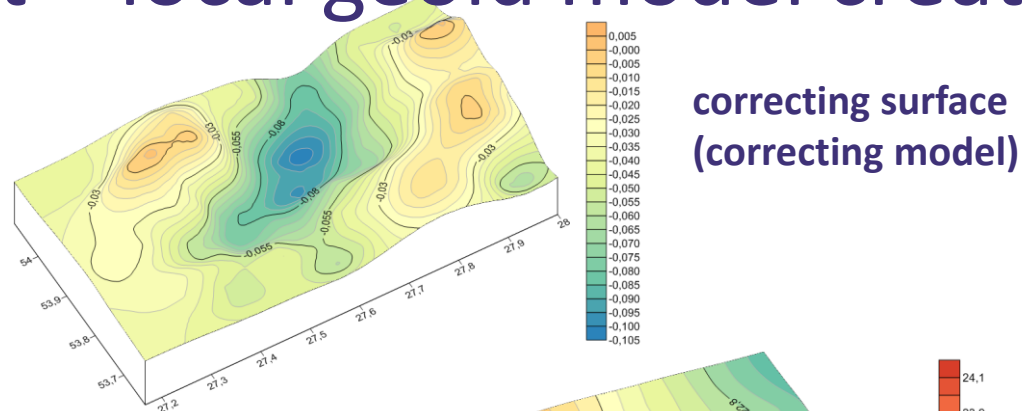
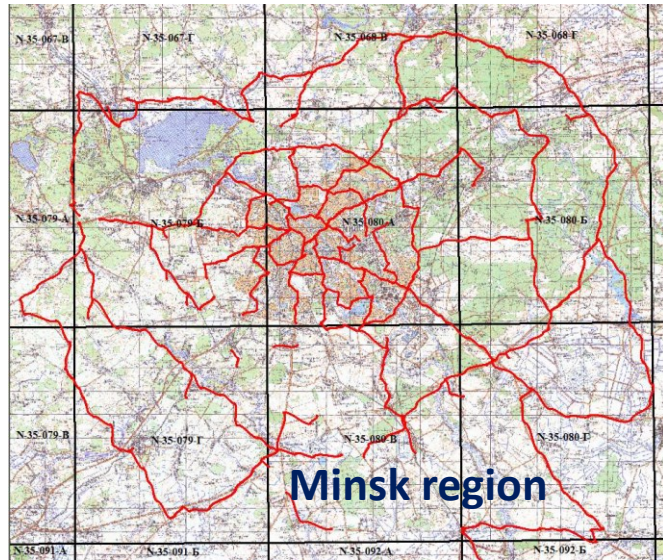
— 1th order
— 2th order



- Last year Belarus joined to EULN (date of 1th order leveling – **3703,3 km**)
- Reconstruction of the 2th order leveling network had been finished to beginning 2016 (**6368,5 km**)



Pilot project – local geoid model creation



- The model was created on the base EGM2008
- Geometrical method (root mean square collocation)
- 102 combined points (GNSS+ 2th order leveling)
- Accuracy of local model ± 3 cm

Plans for near future

- Creation of a modern gravimetric network
- Creation of a national gravimetric quasigeoid model
- Establishment of a new national geocentric coordinate system (ITRS/ETRS realization) and a new normal height system in Belarus .



Thanks for your attention!

