



## **Uplift of the Lake Ladoga and Lake Onega region**

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The north-west region of the Europe (the Baltic shield) has the well-known phenomena of the postglacial uplift. Parameters of this uplift were evaluated many times in various projects (e.g. Baltic Sea Level, BIFROST), from permanent GPS station data, and by tide gauge recordings and repeated precise levelling. In addition to the general uplift pattern that is centered at the northern part of the Gulf of Bothnia ( $\sim 10$  mm/year) and smoothly reduced towards the edge of the Baltic shield, an additional maximum (up to  $\sim 7$  mm/year) at the north of the Lake Ladoga was anticipated by geodetic leveling (Kakkuri, Poutanen 1997) and by GPS observations (Prilepin et al. 2002).

A new data of permanent and campaign-wise GPS observations during 1999-2009 were used to estimate the uplift values in the area of Lake Ladoga and Lake Onega. The height component of GPS points near these lakes have anomalous large uplift values (3 - 6 mm/year) centered to the north of Lake Ladoga. In this determination, permanent IGS and EPN stations in SE Finland and Russia have their expected values of uplift for this region (2 - 5 mm/year). The horizontal components of these points have the usual east-northeast trend.

### References

- Kakkuri J., Poutanen M., 1997. Geodetic determination of the surface topography of the Baltic Sea. *Marine Geodesy*, vol. 20, 4, 1-10.
- Prilepin, M. T., Mishin, A. V., Kaban, M. K., Baranova, S. M. (2002) Study of the Baltic Shield Geodynamics from GPS data. *Izvestiya, Physics of the Solid Earth*, vol. 38, 9, 756-764.