Regional quasigeoid from GOCE and terrestrial measurements

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The contribution presents our first results obtained as a solution of geodetic boundary-value problem where two different sources of input boundary data are combined together. On the upper part of the boundary, separated from the Earth masses, the gravity anomalies are derived from GOCE gravity gradiometry data using a transformation and downward continuation procedure. On the bottom part of the boundary, created by the Earth surface, the gravity anomalies are prepared from the terrestrial or marine gravity measurements. The boundary-value problem is then solved numerically by either parallel Finite Volume or Finite Element Methods. Advantage of this combined numerical approach is high resolution, homogenity and independency from the high-degree global gravity models.