## Glacial isostasy and plate motion

V. Klemann<sup>1</sup>, D. Rau<sup>1,2</sup>, Z. Martinec<sup>1,3</sup>, E. R. Ivins<sup>4</sup>, D. Wolf<sup>1,2</sup>

<sup>1</sup> Helmholtz-Center Potsdam, GFZ, Germany (volkerk@gfz-potsdam.de)

<sup>2</sup> University of Stuttgart, Germany

 $^{3}$  Charles University in Prague, Czech Republic

<sup>4</sup> Jet Propulsion Laboratories, California Institute of Technology, USA

Whereas ice loading of a spherical symmetric earth structure only induces a spheroidal motion with no net-rotation, lateral heterogeneities in the Earth's crust and mantle cause a coupling of spheroidal and toroidal motions. In particular, if plate boundaries are modelled as low viscous zones, glacial isostatic adjustment induces both spheroidal and toroidal surface motions. Based on an improved glaciation model, we discuss the influence of glacial isostasy on plate motion and on other geodetic signals. The aim of this study is to quantify the influence of tectonic features on glacial isostatic adjustment and to show for which geodetic signals lateral heterogeneities have to be considered.