**Solid Earth
Discussions**

Interactive comment on "Effect of glacial-interglacial sea-level changes on the displacement and stress field in the forearc and along the plate interface of subduction zones" *by* T. Li and A. Hampel

T. Li and A. Hampel

li@geowi.uni-hannover.de

Received and published: 1 February 2012

We thank Iain Stewart for his positive comments on our manuscript and his encouraging remarks concerning future investigations. Regarding the implications for palaeoseismological investigations, we will include an additional paragraph in the revised manuscript at the end of the discussion (after line 238 of the original manuscript): "The promotion of earthquakes during sea-level fall and their delay during sea-level rise indicated by our model results may be recorded by sedimentary deposits in the forearc of subduction zones. For instance, at the southern Chilean active margin, turbidites

were more frequent during glacial periods than during the Holocene and marine isotope stage (MIS) 5 (Blumberg et al., 2008). Under the assumption that the turbidites were mainly triggered by earthquakes, the authors infer that the recurrence interval of large subduction earthquakes was 100-200 years during glacial periods. In contrast, the turbidite recurrence time was substantially higher during MIS 5 and the Holocene. Although the increase in turbidite recurrence time appears to be mainly controlled by a decrease in sediment availability (Blumberg et al., 2008), the reduction in Coulomb stress changes induced by postglacial sea-level rise may also have contributed to the increase in turbidite recurrence time by delaying earthquakes on the plate interface."

Reference: Blumberg, S., Lamy, F., Arz, H. W., Echtler, H. P., Wiedicke, M., Haug, G. H., and Oncken, O.: Turbiditic trench deposits at the South-Chilean active margin: A Pleistocene–Holocene record of climate and tectonics, Earth Planet. Sci. Lett., 268, 526-539, doi:10.1016/j.epsl.2008.02.007, 2008.

Interactive comment on Solid Earth Discuss., 3, 1001, 2011.