



## **Triggering of intraplate seismicity by variations in glacier loading**

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The occurrence of very large intraplate earthquakes in northern Fennoscandia at the end of the Weichselian glaciation is commonly attributed to the triggering effect of glacially induced stresses. The load of the ice sheet induced significant horizontal as well as vertical stresses in the crust and during deglaciation the relaxation rate of the vertical stress was much higher than that of the horizontal stresses. The increasing differential stress, in combination with an appropriate background stress field, may have triggered the earthquakes. In addition, the long residence time of the ice sheet may have prevented release of accumulating tectonic strain. Here we will use glacial isostatic adjustment modelling to derive the stress evolution during a glacial cycle, using a reconstruction of the Weichselian ice sheet and a few appropriate Earth models. We then apply a rate-and-state friction based procedure to infer how the interaction of glacially induced stresses, the background stress field and tectonic stress accumulation affect earthquake productivity during and soon after the glaciation.