

Initiating Fennoscandian Seismic Hazard Map

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Fennoscandia is largely a low seismicity intraplate region, with elevated seismicity associated with the passive margin of the North Atlantic and intraplate structures aligned with it. As seismicity is low, seismic hazard is low and thus the usage for national or Fennoscandian seismic hazard maps has been limited to large energy infrastructures. Recently, a new European level Seismic Hazard Model (ESHM20; Danciu et al., 2021) has been compiled. Because seismicity is limited in Fennoscandia and most of the earthquakes are below the cut-off magnitude value of $M_w 3.5$ for the model, the hazard predictions in Fennoscandia are based on rather sparse data. Seismic hazard maps are used to define building codes, and seismic hazard is becoming a more important parameter in planning of new types of energy facilities such as geothermal and Small Modular nuclear Reactors (SMR) in urban areas. It is thus important to obtain realistic estimates of seismic hazard, based on statistically sufficient data. An increase regional hazard would increase construction costs of critical infrastructure projects. The Nordic seismological observatories are engaged in developing a Fennoscandian seismic hazard model using a larger earthquake dataset. The project is using data and seismic source zones compiled for national projects and assembled into joint Nordic models in a series of workshops and meetings. We will present seismic source zones and the first hazard calculation results. The results are compared to ESHM20.

References

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