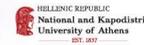




General Assembly of the European
Seismological Commission

ESC 2021 19-24 September 2021



Session 22

The 2020 European Seismic Hazard and risk model: new developments and future directions for seismic hazard and risk assessment in Europe

Conveners:

Stefan Wiemer¹, Domenico Giardini², Fabrice Cotton³

¹ Swiss Seismological Service, ETH Zürich, Zürich, Switzerland

² Domenico Giardini, Energy Science Centre, ETH Zürich, Zürich, Switzerland

³ Fabrice Cotton, Seismic Hazard and Risk Dynamics, GFZ German Research Centre for Geosciences, Potsdam, Germany

The session showcases the innovations and outcomes of the 2020 European Seismic Hazard and Risk Models (ESHM20 and ESRM20), an end-product of the three-year SERA project (www.sera-eu.org) tasked with an assessment of earthquake risk in Europe and the development of regionwide maps of seismic design inputs for Eurocode 8.

Building upon preceding national and European initiatives including the Seismic Hazard Harmonisation in Europe (SHARE) project, the ESHM20 and ESRM20 begins with a compilation of new data and models for seismic risk assessment including updated instrumental and historical earthquake catalogues, active faults, strong motion recordings, ground motion models, building exposure (residential, commercial and industrial) and vulnerability functions. This wealth of data provides deeper insights into the characteristics the earthquake process and of the built environment across Europe and the surrounding countries. To ensure that this information is integrated into the hazard and risk models, the ESHM20 and ESRM20 have spurred development of innovative methodologies for characterizing the earthquake sources, ground motions and building response.

In addition to presenting the results of this latest generation model, the session will also look to the future of seismic hazard and risk activities in Europe within the framework of the European Facility for Earthquake Hazard and Risk (EFEHR, www.efehr.org), a new pillar of the EPOS Seismology Thematic Core Service, and emphasise the role that earthquake scientists and engineers across Europe can play in the development and harmonisation of the next generation of models for mitigation of seismic risk both at a national and European scale.