

The Icelandic Strong-motion Network

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The objective of this presentation is to describe strong-motion monitoring and accelerometric recordings in Iceland; furthermore, to point out some basic properties of the tectonic environments governing earthquakes within Iceland and the Icelandic Region. Finally, outline the data available and provide information regarding its accessibility.

Strong-motion monitoring and recordings have been carried out in Iceland since the early seventies. The Icelandic Strong-Motion Network was established in the mid eighties providing a nation wide coverage of the most important seismic zones. The importance of these data is partly related to the fact that Iceland is an active earthquake area, the most active one in north-western Europe. Over the centuries, earthquakes have caused quite significant damage to buildings and structures, concomitant injuries and casualties. In the last millennium, destructive earthquakes have struck, on average, twice every century. The objective of the Network is to collect data required for rational structural design and risk management.

The Network has recorded over 300 earthquakes, in which the acceleration of the ground response channels has exceeded 0.4% of the acceleration of gravity (g). In these earthquakes over 2300 time series have been recorded, including both ground and response channels. In addition to these series, recordings of more than 1000 time series have been made as a result of acceleration triggered by structural response. At present, the database contains about 3300 time series recorded in earthquakes with magnitudes in the range of about 2 to 6.6 and epicentral distances ranging from close to zero up to roughly 350 km.

The recordings obtained in earthquakes with magnitude greater than 4 are accessible through the ISESD Website, <http://www.ISESD.hi.is>. The information provided is: raw data, i.e. uncorrected time series, corrected acceleration series, derived velocity series, linear elastic response spectra, associated parameters, including earthquake magnitude, source distances, site characterisation, peak ground acceleration and velocity.

References

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