



## **The R-package 'eseis' – towards a toolbox for comprehensive seismic data analysis**

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There are plenty of software solutions to process seismic data. However, most of these are either not free and open-source, are focused on specialised tasks, lack appropriate documentation/examples or are limited to command-line processing. R is the most widely used and still fastest growing scientific software worldwide. This free and open-source software allows contribution of user-built function packages (currently 6091) that cover nearly all scientific research fields. However, support of seismic data is only limited.

This contribution is devoted to present the R-package 'eseis', a collection of functions to handle seismic data, mostly for but not limited to "environmental seismology", i.e. analysis of seismic signals, emitted by Earth surface processes such as landslides, rockfalls or debris flows. The package allows import/export/conversion of different data formats (cube, mseed, sac), signal processing (deconvolution, filtering, clipping/merging, power spectral density estimates), event handling (triggering, locating) and data visualisation (2D-plots, images, animations).

The main advantages of using this package are the embedding of processed data in a huge framework of other scientific analysis approaches, the presence of a sound documentation and tested examples, benefit from a worldwide help and discussion network, the possibility to modify all functions and enlarge the functionality by the user.