



ID: P1.2-592

Type: E-poster

## of a Fault database and 1-D seismic velocity Model for Madagascar: Implication for Tectonic Studies

This study presents the development of a comprehensive fault database for Madagascar, created by integrating information from available geological surveys and published articles. We have compiled a detailed catalog of faults throughout Madagascar, incorporating data on fault geometry to determine size, length, and dip angle of the fault, and tectonic setting to identify the relative motions' effect on faulting. The database encompasses 536 identified faults, which are classified according to published studies and activity status, as reported by the respective authors. Our objective was to categorize faults as active, non-active or non-identified. We have also correlated the fault zones with historical earthquake events. Preliminary analysis indicates a significant spatial association between active fault lines and historical earthquake data. Furthermore, one-dimensional velocity models are integrated into the database to provide insights into subsurface structure and seismic wave propagation. This database will benefit a wide range of audiences and serve as a valuable resource for future tectonic studies and hazard assessment for Madagascar. The data set will support ongoing research by offering an accessible platform for querying fault data and its correlation with seismic activity using seismic data from the National Data Center.

### E-mail

tsitsikel@gmail.com

### In-person or online preference

**Primary author:** Ms TSIRIANDRIMANANA, Rakotondraibe (Institute and Observatory of Geophysics in Antananarivo)

**Co-authors:** Ms RAZAFINDRAKOTO, Hoby (Institute and Observatory of Geophysics in Antananarivo); Mr TAHINA, Rakotoarisoa (Institute and Observatory of Geophysics in Antananarivo)

**Presenter:** Ms TSIRIANDRIMANANA, Rakotondraibe (Institute and Observatory of Geophysics in Antananarivo)

**Session Classification:** P1.2 The Solid Earth and its Structure

**Track Classification:** Theme 1. The Earth as a Complex System: T1.2 The Solid Earth and its Structure