

## Analysis of unusual seismic events in northwestern Madagascar

On the 15th of May 2018, an unusual seismic event of magnitude 5.9 has been detected in North-West of Madagascar. Following that event, thousands of earthquakes were detected from that zone. By combination of data recorded from the local seismic network and the seismic stations of the International Monitoring System, the NDC Madagascar have an inventory of more than fifty seismic signal per day from that same zone. Seismic data analysis and focal mechanism study has been performed in this study to explain the source of those triggering events. Analysis showed that most of those earthquakes are generally located between 11.8373°S to 14.1798°S in latitudes and 44.4773°E to 46.7782°E in longitudes and has 10 to 35km in depth. Moreover, on 11th November, another earthquake of 5.7 in magnitudes has been detected. Following that day, an extension of North-West to South-West of those earthquakes has been remarked. In addition, the focal mechanism analysis shows that 58% of the event are generated from slip faults, 39% are from normal fault and 3% are from reverse fault. The two main events are from slip fault. In this study we interpret those events as originated from a magma shift under the seabed.

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