



## **Microseismicity related to the West Fissure Fault System, Northern Chile**

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We investigate microseismicity which has been recorded by a temporary local seismic network near the *West Fissure Fault System* (WF), Northern Chile, since November 2005. The network consists of 13 continuously recording 3-component stations, which are located at  $\sim 21^\circ S$  and cover an area of about  $50 \times 50 km$ . The main objectives of the experiment are (I) to monitor the microseismic activity related to the segment of the WF near  $21^\circ S$  in time and space and (II) to understand the processes occurring in the fault zone.

Up to now, we have analysed about 400 seismic events with magnitudes  $-0.5 < M_L < 4.2$  and focal depths between  $2 km$  and  $50 km$ . The crustal microseismicity is only partly associated with known branches of the *West Fissure Fault System*. Two seismic clusters were detected, one at  $35 km$  depth in the SE of the monitoring area, and one in the central part at  $13 - 14 km$  depth beneath the surface. We present precise relocations of all microseismic events, investigate the temporal and spatial characteristics of the earthquake clusters, and show focal mechanisms and stress tensor inversions for a subset of events.