



## **Robust automatic P-phase picking using the ANCORP continuous seismic dataset**

**S.E.J. Nippres**(1) and A. Rietbrock(1)

(1) Department of Earth and Ocean Sciences, University of Liverpool, Liverpool, L69 3GP, UK.

Traditionally, seismologists look at all waveforms recorded by their observatory or at all traces required for their research project and make manual picks for the onset times of P- and S-phases. This method requires significant amounts of man power and time with sometimes variable results. Only the large events are generally recognised and picked, thus only using ~50% of the actual recorded seismicity. To fully exploit the full a seismicity dataset and hence reanalysing a large dataset we use automatic picking algorithms.

We test numerous well established automatic picking algorithms (e.g. Allen picker, Baer, AR and STA/LTA) on the ANCORP dataset that was collected on a temporary dense seismic network (34 stations) operated between November 1996- March 1997 in northern Chile and southern Bolivia. Manual picks are used to train the picking algorithms for each station and establish the optimum picking parameters that produce the greatest accuracy for each algorithm at each station. The optimum picking parameters for each station are quite variable and therefore have to be adjusted individually to get the best performance. The automatic pickers using these optimum picking parameters for each station are then set running on the continuous ANCORP continuous dataset. For each event an initial location is calculated using HYPO71. This new picture of the local seismicity at intermediate depths during the period that the ANCORP network was operational will help to us to better understand the dynamic and complex systems that generate this observed seismicity.