

## SUMMARY OF EXPERIMENT ECUADOR RAMP

Network Code and Year: XV 2002

Experiment Passcal internal number: 0146

DAS number 6127

DAS experiment name: ctx01

Number of seismic station: One broad band station with sensor Guralp 40T and Reftek 72A datalogger.

Sampling Rate 50 sps, 3 channels

Position: -0.6750° S, -78.46433°W, h=4400.52 m

Location: North Western flank of Cotopaxi volcano

Anticipated total volume: 439 Mb segy format data

Dates of deployment: From January 5<sup>th</sup> 2002 to February

Names of Principle Investigators/operators and their institutions:

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### A brief description of the experiment:

During Nov-Dec 2001, Cotopaxi volcano showed important signals of activity. This volcano is one of the most active volcanoes of Ecuadorean Andes. It has exhibited a recurrence interval of around 100 years for important eruptions. The Instituto Geofisico monitored this volcano using a network of 4 short-period seismic stations. This experiment aims to improve the detection capabilities using a temporary deployment of a broad-band three component seismic station. This station will allow to record long-period and very long-period events that we suppose are occurring at Cotopaxi.

### Preliminary scientific results, if any:

A variety of seismic signals were recorded since January 4th, 2002 to February 6th, 2002, during a period that followed the seismic crisis of Cotopaxi (Nov-Dec 2001). During this crisis a swarm of VT events was followed by a very intense swarm of long-period events. At the time of this deployment some VT events were still recorded, however a significant majority of events were LP events. Some LP events exhibit a VLP spectral component. VLP events in Cotopaxi have been related to volumetric changes in a sub-vertical crack at a depth of 2-3 km beneath the north-western flank (Molina et al., 2008). This station was located just on the north-western flank at 4400 masl.

Table 1 presents a list of the largest events recorded during ctx01 deployment

Event Date	Time	Type	Amplitude (counts)
2002 01 08	18h16	VLP	-

2002 01 10	01h 17	VLP	-
2002 01 12	18h 20	LP	6520
2002 01 13	10h54	Icequake	380
2002 01 15	20h 00	LP	3420
2002 01 18	16h 17	LP	10300
2002 01 19	19h 37	LP	12050
2002 01 28	15h 03	LP	9034
2002 01 29	00h 03	VT	2566
2002 01 29	03h 03	LP	4865
2002 01 29	20h 38	VT	1100

Approximate amount of data: 439Mb

Describe any known problems with the data or particular problems encountered during the experiment:

- We had power problems because a failure in the table box that controls power supply from solar panels.
- We had difficulties for submitting data.

List of publications submitted:

None has used this data yet.