SnT 2025
8 SEPTEMBER ONLINE DAY
9 TO 12 SEPTEMBER AT HOFBURG PALACE, VIENNA & ONLINE
CTBT: SCIENCE AND TECHNOLOGY CONFERENCE

P5.2-012

Growth and advancement of the Seismology Laboratory at the National Data Center of Paraguay

Alcides Caballero
Moisés Gadea

National Data Center - Paraguay

INTRODUCTION AND MAIN RESULTS

The CPUP seismic station was established in the 1990s. Later, an agreement with the CTBTO and the installation of the I41PY infrasound station led to the National Data Center, starting continuous technological improvements. Enhanced analytical capabilities enabled collaboration with the University of São Paulo (USP), producing research and publications.

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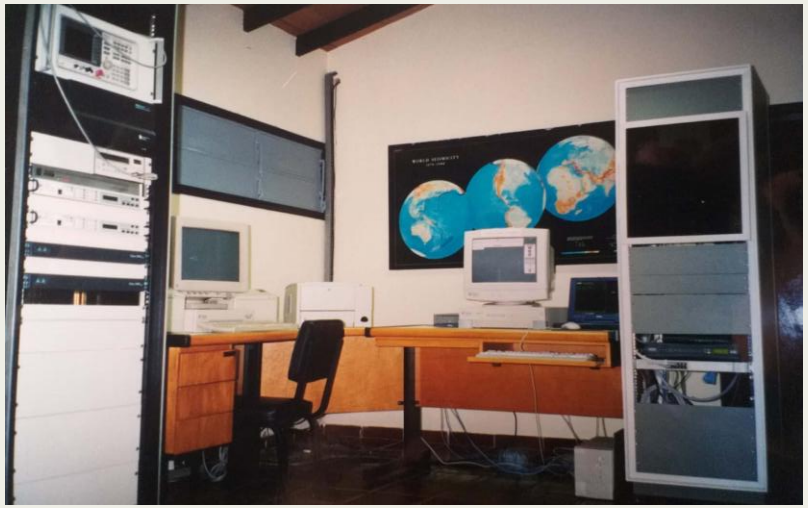
Seismic monitoring: Its beginnings

Before the agreement with the CTBTO, the CPUP station, part of the Global Telemetric Seismic Network (GTSN), had been transmitting its data exclusively to Albuquerque, New Mexico - USA, since August 4, 1994.

Waveforms were displayed and analyzed by the software “seatool” provided by AFTAC Team.



Machine room and real-time data transmission since August 4, 1994

Infrasound Station Installation

In 2001, the I41PY station was installed. It consists of four elements and transmitted data via radio frequency to the CPF, where the CPUP borehole is located.

H4 element: WNRS, tower, vault and the view of the CPF of Infrasound station

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National Data Center Installation

CTBTO Officer Mr. Mario Villagran with Mr. Vincent Figueres Intalling the NDC, and lunch time.

In 2012 the National Data Center have been installed by CTBTO. Seismic and infrasound waveforms were received in near real time.
NDC-in-a-box package available for data analysis.

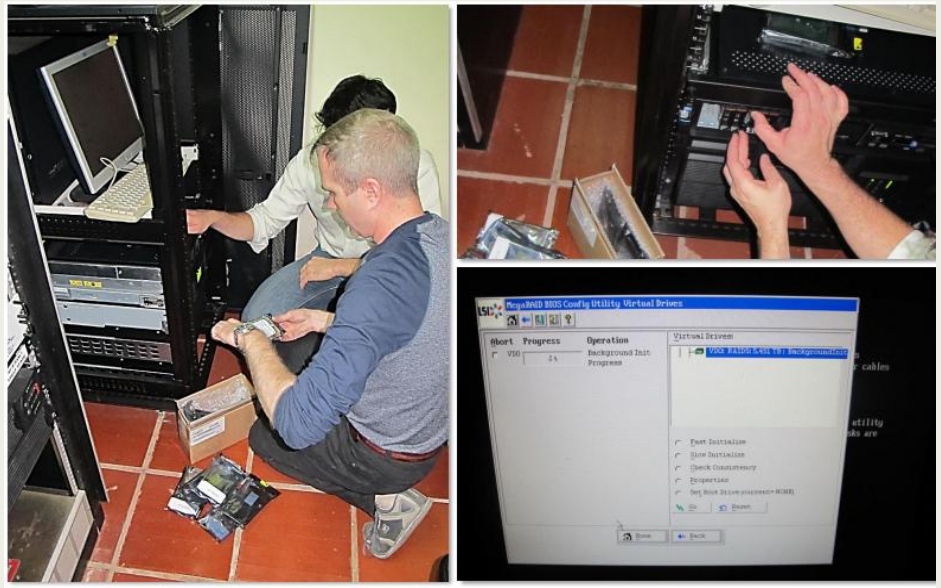
Infrasound Station upgrade

In July 2018, the I41PY has been updated and improved.

I41PY upgrade successfully

CBS maintenance

In July 2019, the Capacity Building system was maintained with a software package update.



CTBTO Officer Mr. Alexander Poplavskiy with Mr. Vincent Figueres adding disk to the CBS.

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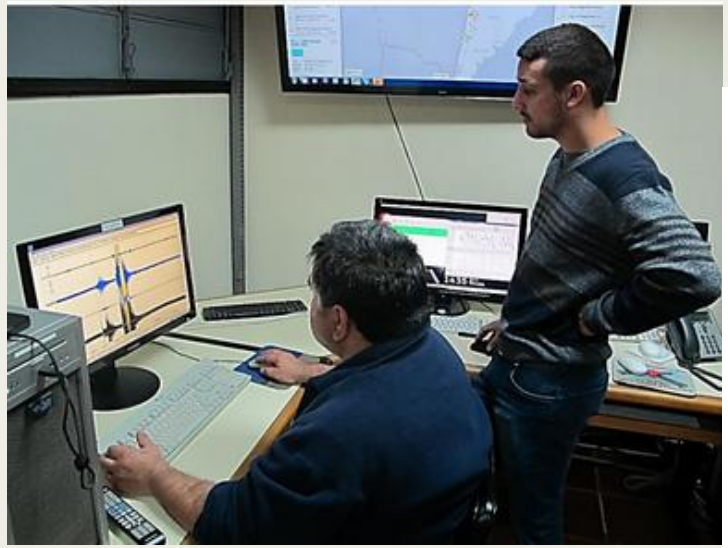
New software packages

Getting started with the SeisComP3, DTK-GPMCC as well as Geotool.

Mr. Alcides Caballero learning how to add station from USP network and picking in SeisComP3 with the CTBTO Officer Mr. Alxeander Poplavskiy.

From Seatool to Geotool

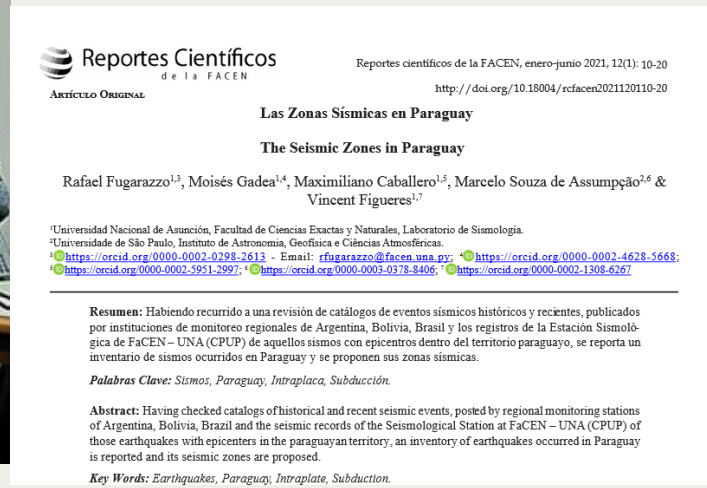
CPUP data Comparison in geotool and seatool.



Mr. Moisés Gadea analizing data.

Satisfactory results: Analysis and journal publications

Improving the analysis capacity and working with new softwares, the outstanding results can be watched here.



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ARTÍCULO ORIGINAL

Las Zonas Sísmicas en Paraguay

The Seismic Zones in Paraguay

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Resumen: Habiendo recurrido a una revisión de catálogos de eventos sísmicos históricos y recientes, publicados por instituciones de monitoreo regionales de Argentina, Bolivia, Brasil y los registros de la Estación Sismológica de FaCEN – UNA (CPUP) de aquellos sismos con epicentros dentro del territorio paraguayo, se reporta un inventario de sismos ocurridos en Paraguay y se proponen sus zonas sísmicas.

Palabras Clave: *Sismos, Paraguay, Intraplaca, Subducción.*

Abstract: Having checked catalogs of historical and recent seismic events, posted by regional monitoring stations of Argentina, Bolivia, Brazil and the seismic records of the Seismological Station at FaCEN – UNA (CPUP) of those earthquakes with epicenters in the paraguayan territory, an inventory of earthquakes occurred in Paraguay is reported and its seismic zones are proposed.

Key Words: *Earthquakes, Paraguay, Intraplate, Subduction.*

REVISTA

EFECTOS DE LOS TERREMOTOS REGIONALES EN LAS EDIFICACIONES EN ASUNCIÓN – PARAGUAY

EFFECTS OF REGIONAL EARTHQUAKES ON BUILDINGS IN ASUNCION – PARAGUAY

Two scientific papers published in local journals.