Geophysical Research Abstracts
Vol. 12, EGU2010-11031, 2010
EGU General Assembly 2010

Integrated Seismological Network of Brazil: Key developments in technology.

Marlon Pirchiner (1), Marcelo Assumpção (1), Joaquim Ferreira (2), and George França (3)

(1) University of São Paulo, Institute of Astronomy, Geophysics and Atmospherical Sciences, Geophysics, São Paulo, Brazil (marlon@iag.usp.br), (2) Federal University of Rio Grande do Norte, UFRN, (3) University of Brasilia, Seismological Observatory

The Integrated Seismological Network of Brazil - BRASIS - will integrate the main Brazilian seismology groups in an extensive permanent broadband network with a (near) real-time acquisition system and automatic preliminary processing of epicenters and magnitudes. About 60 stations will cover the whole country to continuously monitor the seismic activity. Most stations will be operating by the end of 2010. Data will be received from remote stations at each research group and redistributed to all other groups. In addition to issuing a national catalog of earthquakes, each institution will make its own analysis and issue their own bulletins taking into account local and regional lithospheric structure.
We chose the SEED format, seedlink and SeisComP as standard data format, exchange protocol and software framework for the network management, respectively. All different existing equipment (eg, Guralp/Scream, Geotech/CD1.1, RefTek/RTP, Quanterra/seedlink) will be integrated into the same system.
We plan to provide: 1) improved station management through remote control, and indexes for quality control of acquired data, sending alerts to operators in critical cases. 2) automatic processing: picking, location with local and regional models and determination of magnitudes, issuing newsletters and alerts. 3) maintainence of an earthquakes catalog, and a waveforms database. 4) query tools and access to metadata, catalogs and waveform available to all researchers.
In addition, the catalog of earthquakes and other seismological data will be available as layers in a Spatial Data Infrastructure with open source standards, providing new analysis capabilities to all geoscientists.
Seiscomp3 has already been installed in two centers (UFRN and USP) with successful tests of Q330, Guralp, RefTek and Geotech plug-ins to the seedlink protocol. We will discuss the main difficulties of our project and the solutions adopted to improve the Brazilian seismological infrastructure.