

Session 03: Seismological studies in polar regions and the cryosphere

The three decades evolution of the Antarctic Seismographic Argentinean Italian Network (ASAIN)

Milton Percy Plasencia Linares, Marco Santulin, Andrea Magrin, Denis Sandron, Marco Romanelli
and Roberto Laterza

National Institute of Oceanography and Applied Geophysics – OGS

The Antarctic Seismographic Argentinean Italian Network (ASAIN) is a permanent seismic broadband network that has been operating in the Scotia Sea region, on the Antarctic Peninsula and in the polar region since 1992. It was deployed and managed in the framework of the collaboration between the National Institute of Oceanography and Applied Geophysics (OGS) and the Dirección Nacional del Antártico (DNA) - Instituto Antártico Argentino (IAA), with financial support from the Programma Nazionale di Ricerca in Antartide (PNRA). ASAIN supplies data to IRIS (Incorporated Research Institutions for Seismology), ORFEUS (Observatories and Research Facilities for European Seismology) and GEOFON (GEOFOrschungsNetz). A SeisComp server ensures the automatic detection, localisation and magnitude estimation of the recorded earthquakes.

ASAIN's records improve the detection capabilities of the global seismic networks and help refine the regional earthquake locations published by the global localisation centers. The operation of the seismic stations in the Antarctic continent and their continuous operation over a long period of time also allow for preferential observation of ice-related and volcanic seismicity along the Antarctic Peninsula. Recently, a new seismic station at Petrel Base (Dundee Island) was added to the network, which now consists of 8 seismological stations with broadband sensors (Guralp and Streckeisen/Quanterra) . The entire waveform archive with associated metadata, containing nearly thirty years of data, has been reviewed. We will present the latest updates to the network configuration and the key features of the seismic stations.