



The IDC Seismic, Hydroacoustic and Infrasound low and high noise models

David Brown, Nicolas Brachet, Pierrick Mialle, and Ronan LeBras
CTBTO, IDC, Vienna, Austria (david.brown@ctbto.org)

The International Data Centre (IDC) of the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) in Vienna, Austria, is developing the capability to routinely determine the sensor noise levels for all Seismic, Hydroacoustic and Infrasound (SHI) stations of the International Monitoring System (IMS) sending data to the IDC. This noise data can be used to provide state of health information to station maintenance personnel, and can be used in network detection capability analyses, and can also be used as a quality control measure in automatic processing. Station noise is being determined as a Power Spectral Density (PSD) using the Welch overlapping method. When PSD's for a given sensor are collected over time and considered together it is possible to generate a Probability Density Function (PDF) for the power spectra and determine low- and high-noise curves that bound the PDF. When used in data quality control applications warnings can be issued if the PSD for incoming data for a given sensor is not found to be bounded by the previously determined low and high noise models for that sensor. In this paper, low and high noise models will be presented for representative seismic, hydroacoustic and infrasound stations, as well as preliminary global low and high noise models for each of these technologies.