Geophysical Research Abstracts
Vol. 14, EGU2012-10938, 2012
EGU General Assembly 2012

The International Federation of Digital Seismograph Networks (FDSN): An example of open access to scientific data sharing

G. Suárez (1), T. van Eck (2), and T. Ahern (3)

(1) Instituto de Geofísica, UNAM, Mexico, (2) KNMI (Royal Netherlands Meteorological Institute), Netherlands, (3) IRIS, Data Management Center, USA

The International Federation of Digital Seismograph Networks (FDSN) is probably one of the more successful examples of an organization dedicated to the production of data for scientific purposes and its free and open distribution. The FDSN was founded in 1984 with the purpose of: 1. Defining the specifications of digital broadband seismograph systems; 2. Coordinate the siting plans for new observatories in order to obtain optimal global coverage; 3. Develop data formats and protocols to exchange and distribute seismological data; and 4. Establish distributed data centres that provide access to data. The Federation is a non-governmental organization with a Commission status in IASPEI. It is supported and sustained solely by the work and contributions of its affiliates. To date, almost 90 research institutions and seismological networks are members of the FDSN, and FDSN data centers provide data from almost 20,000 seismic observatories distributed worldwide. Of these, more than 200 seismic stations are part of the FDSN backbone network and transmit data in real time. These data transmitted to the data management centres have become the backbone of the rapid determination of earthquake magnitude, location and focal mechanisms, as well as supporting agencies engaged in civil protection and emergency attention. The tsunami warning centres now operating in various oceans are important users of the backbone network. The growth of the data archive in the three distributed national data centres has been exponential since the foundation of the FDSN. Data distribution centres are located in the United States, Europe and Japan. The size of the archive of FDSN-affiliated stations is in the order of 80 Terabytes of data available online. In 2011, one of the FDSN data centres, the Data Management Centre of IRIS distributed more than 162 terabytes of data to scientists and institutions worldwide. The philosophy of open and free access to data produced by high-quality instrumentation has been the corner stone and the reason for the success of the FDSN. Now more than 25 years after its foundation, it has become a fundamental component of the global seismological community. It is also an example for future programs and organizations interested in gathering and distributing free and open data for scientific and civil applications.