



Session 03

Challenges due to massive generation of seismic data. Large-N experiments, fiber optic cables, and how users, data centres and applications will cope with data in the near future

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Within the seismological community, the last decades have been characterised by large amount of new additional conventional seismic stations becoming available. Dense observations due to new technologies include Large N deployments, cheap sensors, and fibre-optic cables. All of them are starting to show their great potential in providing quality data with a wide spectrum of applications ranging from Tsunami early warning to Infrastructure monitoring. Although data quality and resolution of the examples mentioned above are different, they have in common the potential to produce large volumes of data in a very short period of time due to both the extremely dense spatial and temporal resolutions.

This considerable increase in the data generation is challenging for seismological data centres hosting data, because there are still no standard policies on how this should be managed by our standard web services, which are very stable and mature, but have never faced the need to support an on-the-fly conversion of such a big volume of data from proprietary to standard formats.

Some data centres are already using particular data formats to archive these data (e.g. PH5) or to provide it to users (e.g. ASDF), but additionally to this a change in the way our web services process and provide such amount of data would be needed.

The scope of this session is to present the latest advances on this topic, on-going coordinated efforts between big data centres (e.g. IRIS, GFZ, RESIF), and to collect feedback and requirements from the community.

We expect contributions related, but not limited to:

- Best practices for seismologists and data centres producing data.
- Users processing big amounts of seismic data.
- Developers working on cloud processing to minimize data transfer or other novel approaches.
- Data producers of DAS and Large-N experiments.
- Data Centre Operators archiving and providing big datasets.
- Instrument Manufacturers (e.g. DAS, Large-N instruments).