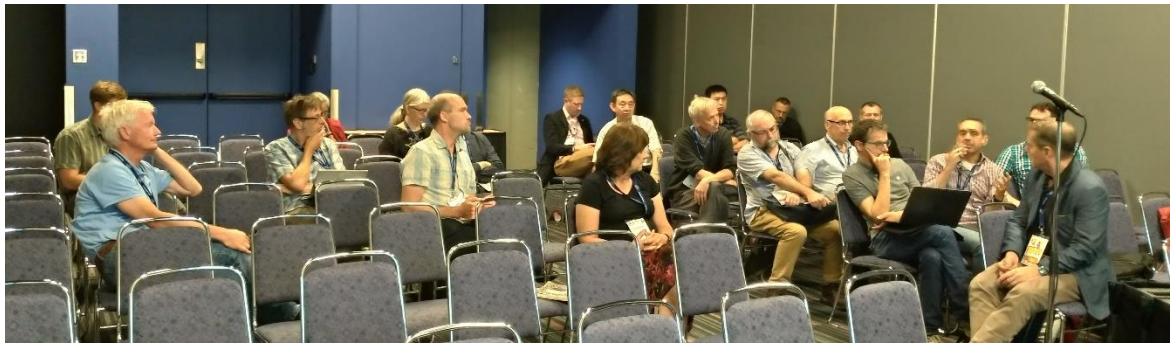
Working Group I
2019 meeting minutes

Working Group I Meeting

- MCC 513D 12:00-13:30 Friday July 13, 2019
- MCC 513D 11:30-11:50 Sunday July 15, 2019 (small group discussion)



Revision of the definition of FDSN Backbone Stations

- A subset of stations with broad geographical distribution, composed of the highest quality broadband stations available in as many geographic parts of the world as possible.

- This definition is complemented with **guidance** to assist working group with the implementation of station selection. (see next slide)
- The ultimate goal is to have 300-500 high-quality FDSN Backbone Broadband Stations with nicer global coverage.
- List of FDSN Backbone Stations will stay static (closed stations will be kept in the list).

Guidance for FDSN Station Selection

- **Broadband** permanent station with data stored continuously or transmitted in real time (preferred)
- **Global coverage**
  - broaden international participation, every FDSN member should designate at least 1 station from their network
  - Enhanced coverage in **seismogenic zones**
  - **300-500 backbone stations**
- **High-quality data and metadata**
  - low ambient noise level (in longer periods)
  - high data availability
  - precise metadata in FDSN standard formats, preferable stored in one of federated datacenters

Procedure to densify FDSN Backbone Stations

- Encouraging each FDSN member network/data center to send in their metadata in XML (StationXML) to any federated data center through mailing list.
- Begin with 3 major global seismic networks (GSN, GEOFON, GEOSCOPE) whose instrumentation standards and metadata are relatively more reliable.
- Adding regional stations in the desired area on the basis of the guidance. Only those stations, whose metadata has been archived at federated data center, will be considered to be part of the FDSN backbone stations.
- To develop a QC mechanism for evaluating FDSN station performance across seismic networks, mostly with help of IRIS Mustang, EIDA WFCatalog or a new FDSN Availability service, whenever possible.
- Evaluating FDSN station performance every 2 years.
- The densified FDSN backbone stations will be proposed in the next FDSN meeting.
- Once the FDSN backbone stations has been updated, we may officially announce this news in EOS.

Station book

- The station inventory of all networks, permanent or temporary, is no longer maintained. The Working Group I will not provide this information any more.
- Instead, the corresponding data centers should submit their relevant metadata to any federated data centers to be accessible by the IRIS MDA service.

Revising the WG I webpage

- We need to revise the section of “Areas of interest to the working group”
- Remove not valid references (web links) “View listing of FDSN stations” and “2013 FDSN Network List (Excel file)”
- Add new references such as to “_FDSN” virtual network in IRIS-MDA
  - Currently, there are **214** FDSN Backbone Stations according to the IRIS virtual network web service at:

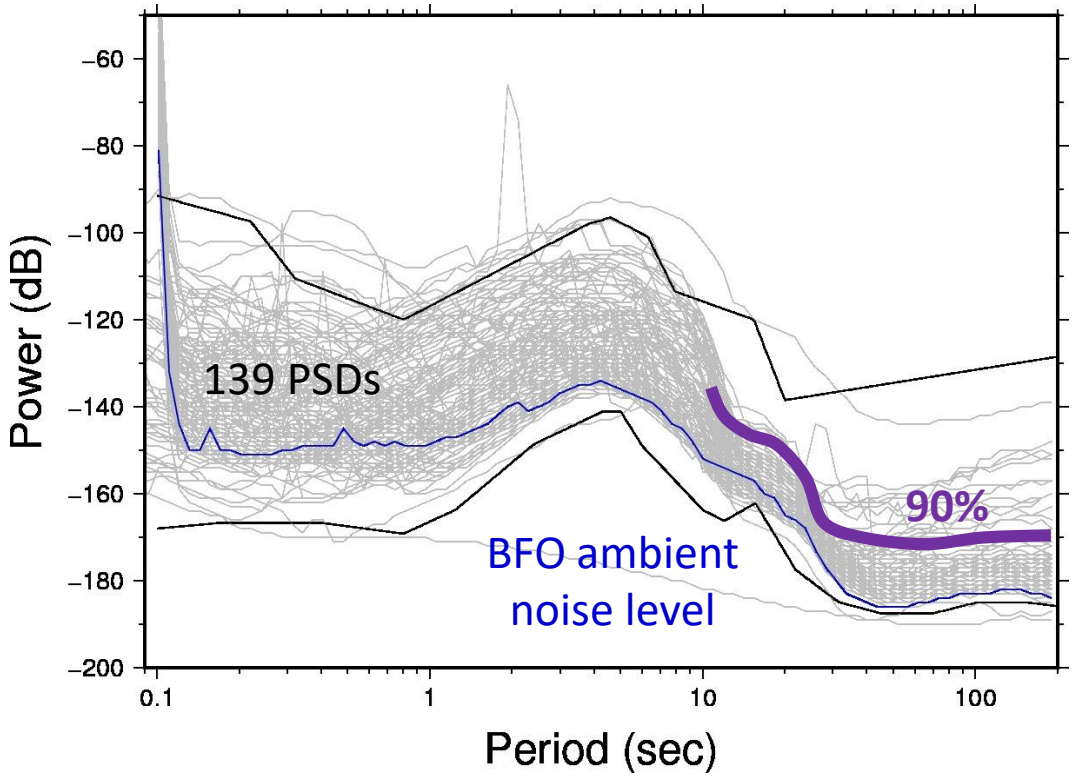
http://service.iris.edu/irisws/virtualnetwork/1/query?code=_FDSN&format=CSV

Appendix:
A quick FDSN network performance report

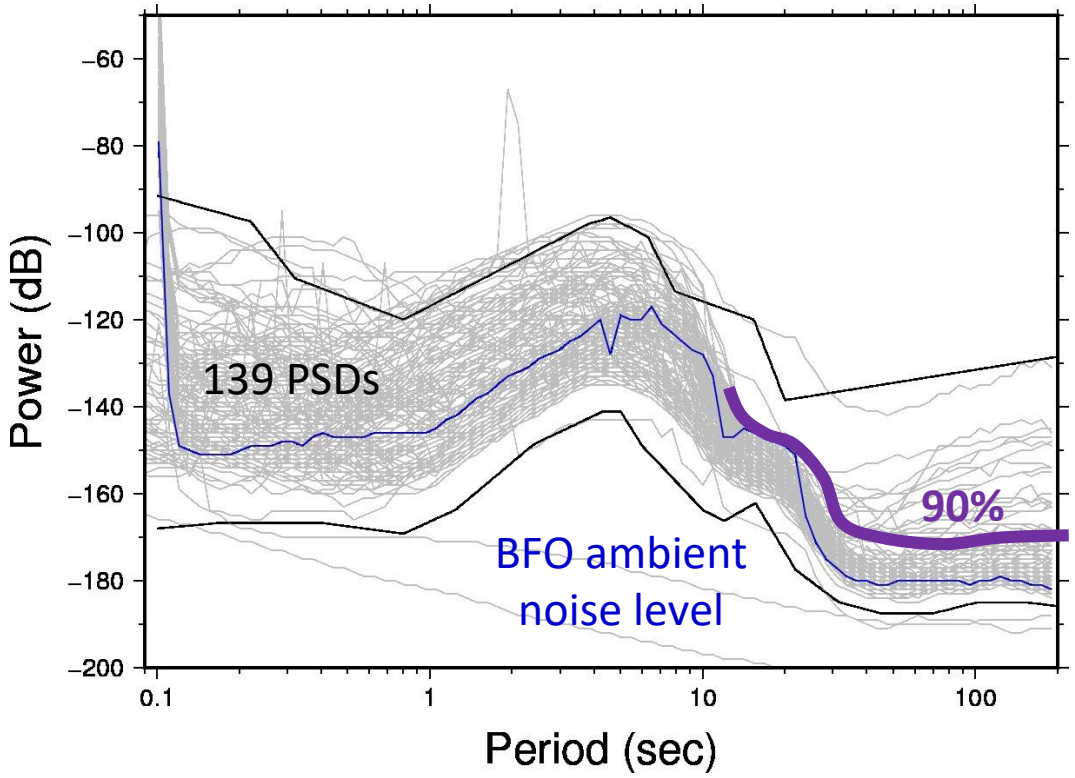
FDSN Ambient Noise Levels

IRIS mustang/noise-psd web service

June, 2018

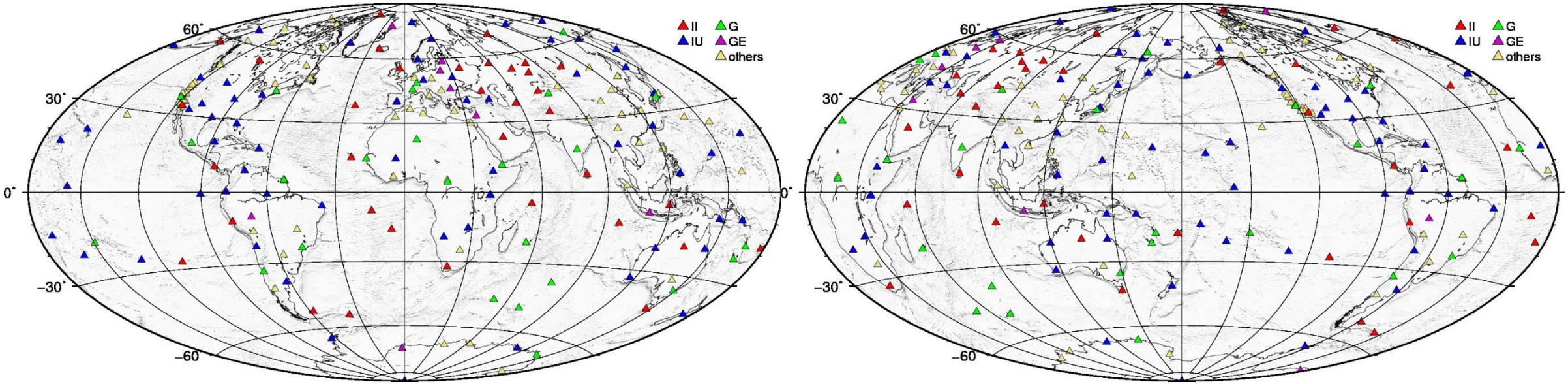


December, 2018



FDSN Backbone Stations

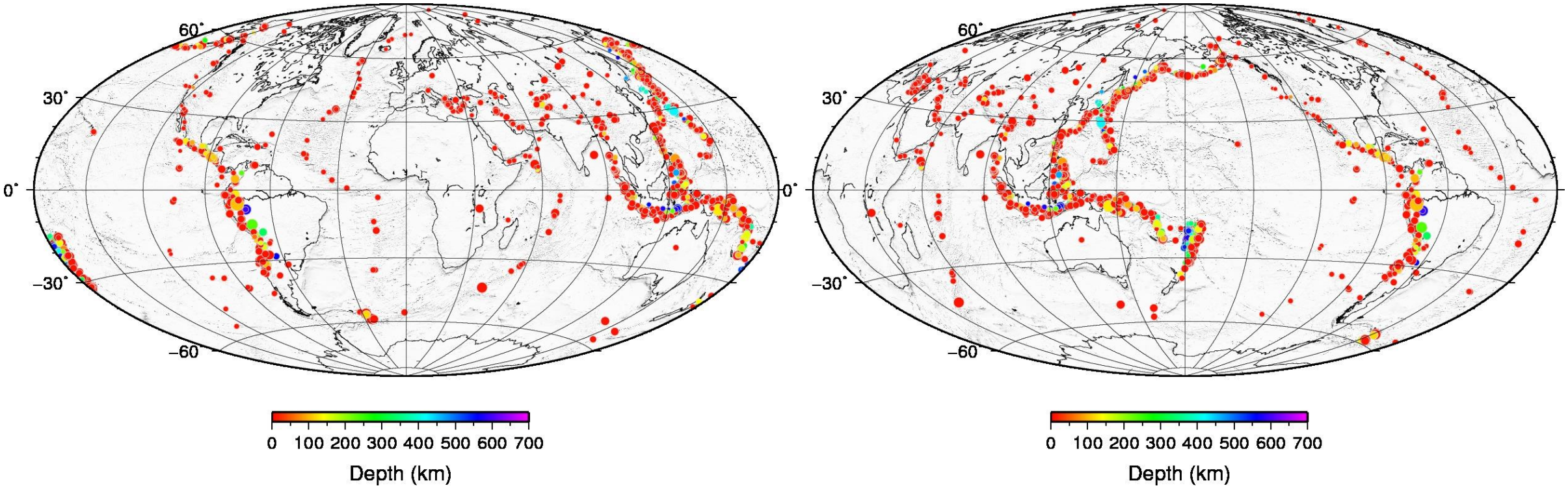
205(nominal)-36(expired)=169
Station list from
http://www.iris.edu/mda/_FDSN



225 FDSN Stations
http://www.iris.edu/gmap/_FDSN

Global Seismicity by FDSN Backbone Stations

SeisComP3： 2018-12-4/2019-06-20



Frequency-Magnitude Diagrams

Seismicity in 2018-12-4/2019-06-20