Earth science data policy in Latin America

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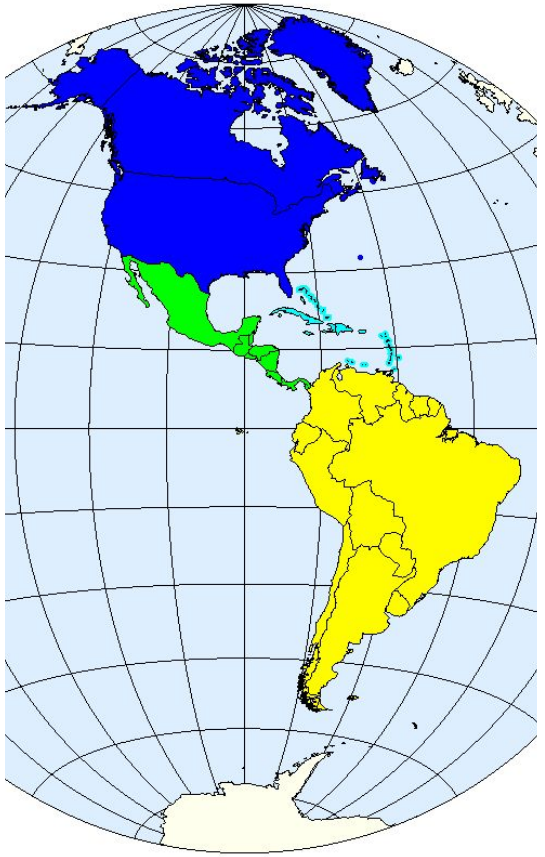
Latin America is an evolving idea

Latin America

- ➔ We are talking about many countries and territories;
- ➔ Divided into active and passive tectonic environments;
- ➔ Share complicated political and economical history that can be associated to a past or current influence from well developed countries;



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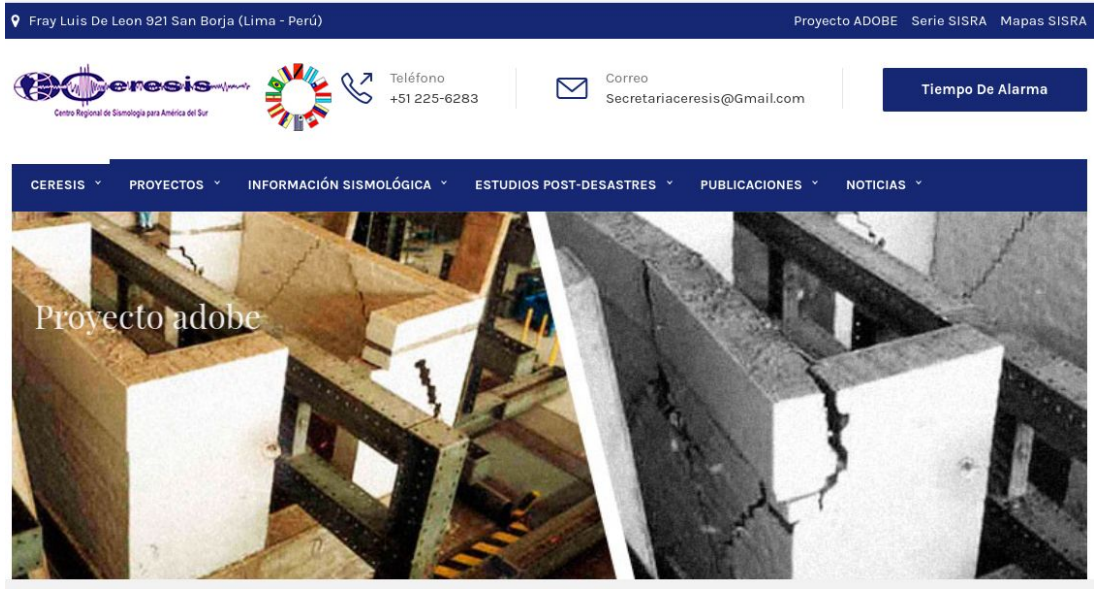
CERESIS and LACS

CERESIS is an initiative to integrate **South America**, focused on seismic engineering



LACSC is a IASPEI commission to integrate **Latin America** in seismological efforts and discussion

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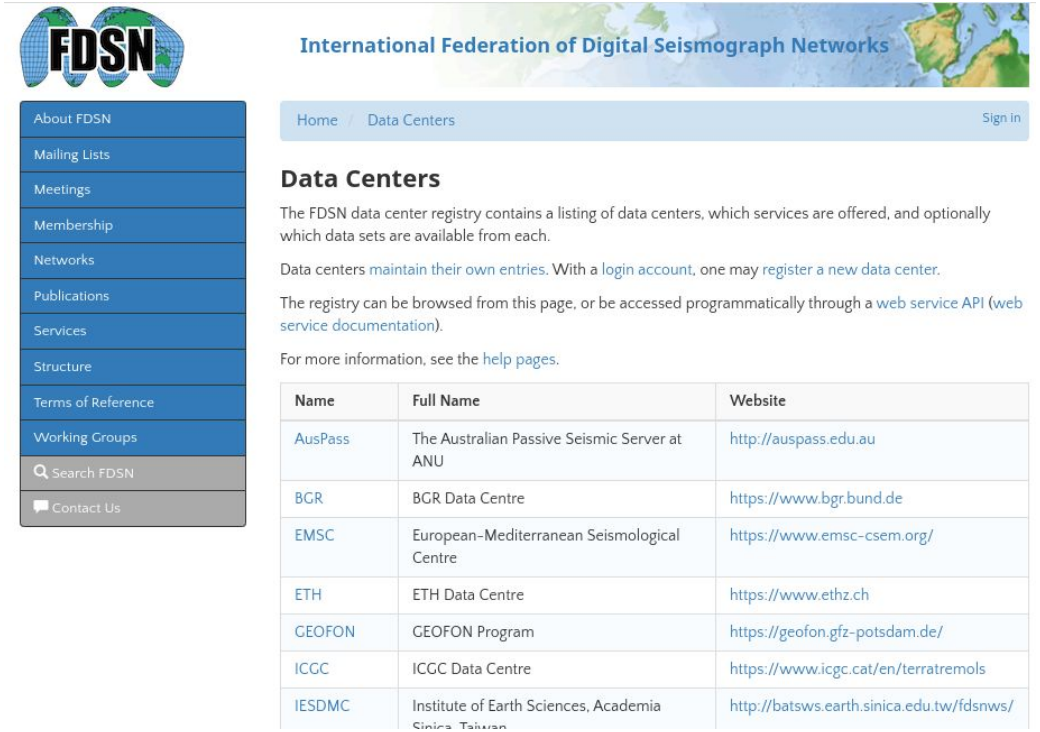
Data Policy >> reflects on FAIR

- (Meta)data should talk for itself
- 3 levels considered:
  - Metadata (MDA) not findable (not declared)
  - Metadata findable and restricted
  - Metadata findable and data *possible* accessible
- Used IRIS[1] infrastructure that should receives updates from all know registered FDSN data centers



[1] http://ds.iris.edu/gmap/

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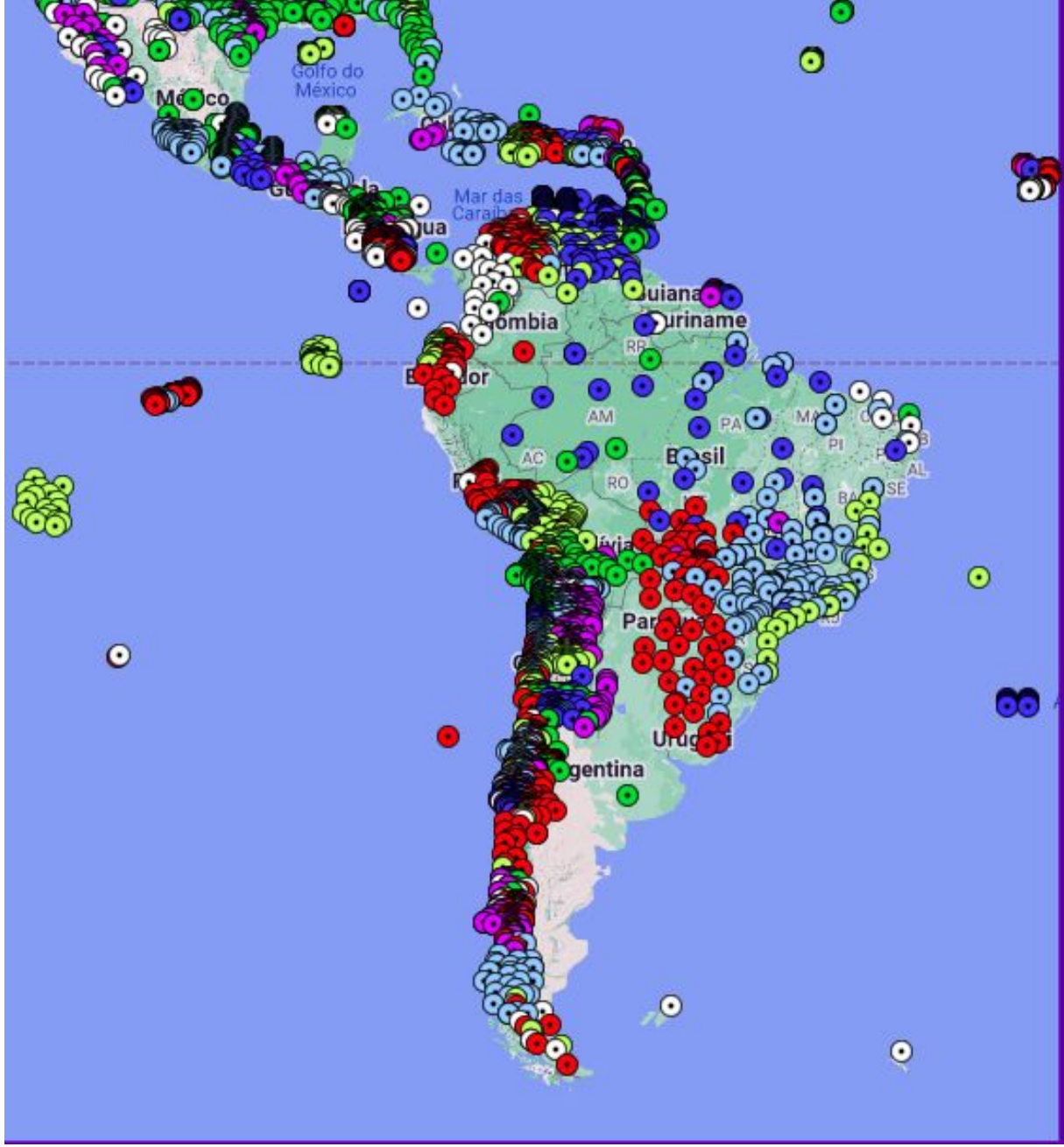
Seismological Stations (all time)

- ➔ Seismological stations at IRIS (- *RASPISHAKE network*) from 1990 to today;
- ➔ Most covering the active boundary and South regions of Brazil
- ➔ Amazon region show lower density of stations
- ➔ Panama, Honduras, Argentina and Peru are great voids of information
- ➔ Countries on active areas focus on that



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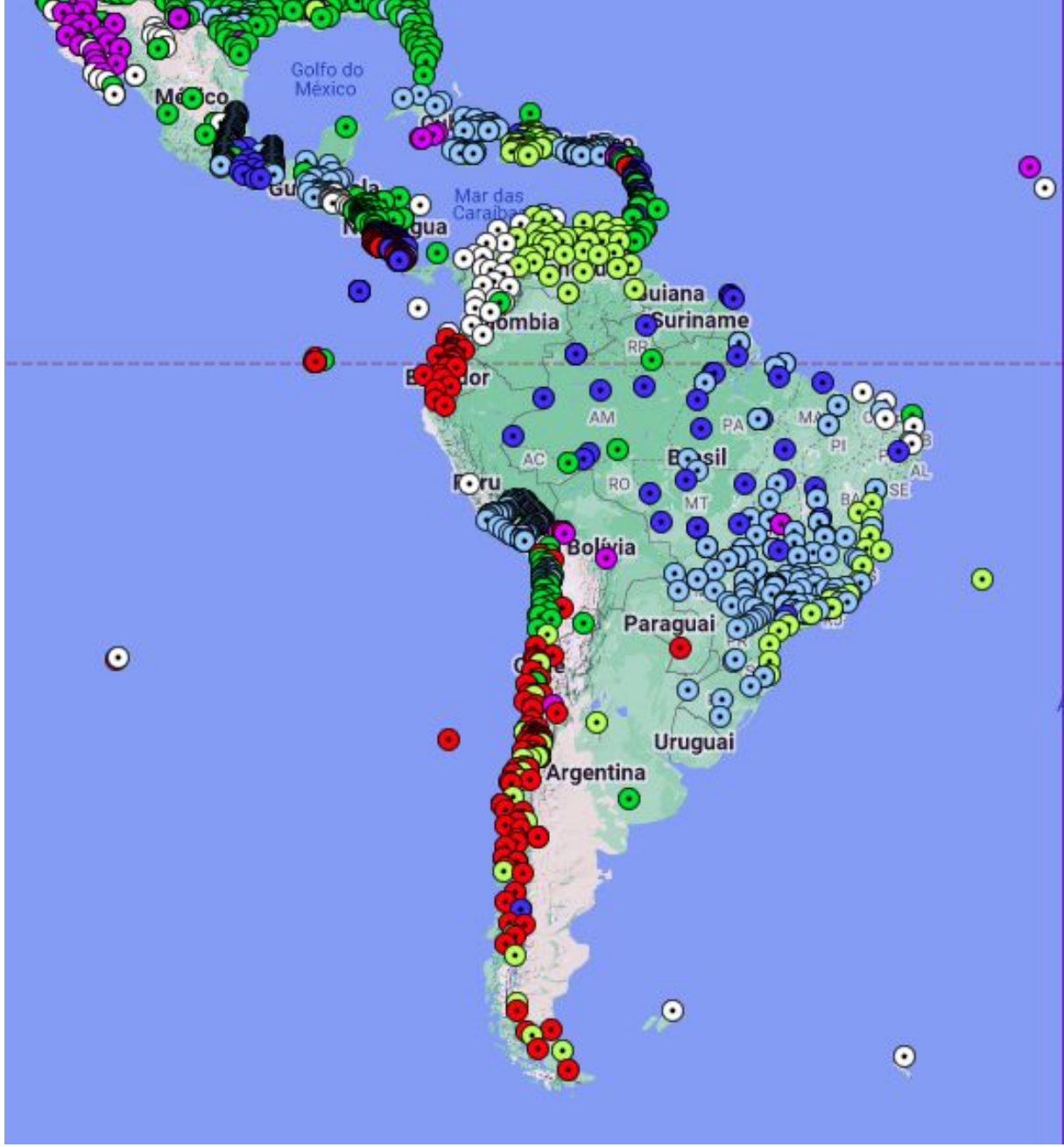
Seismological Stations (permanent)

- ➔ Pattern does not change much.
- ➔ Some countries / regions do have stations that are not show here.
- ➔ Large gap between the active margin and continent interior



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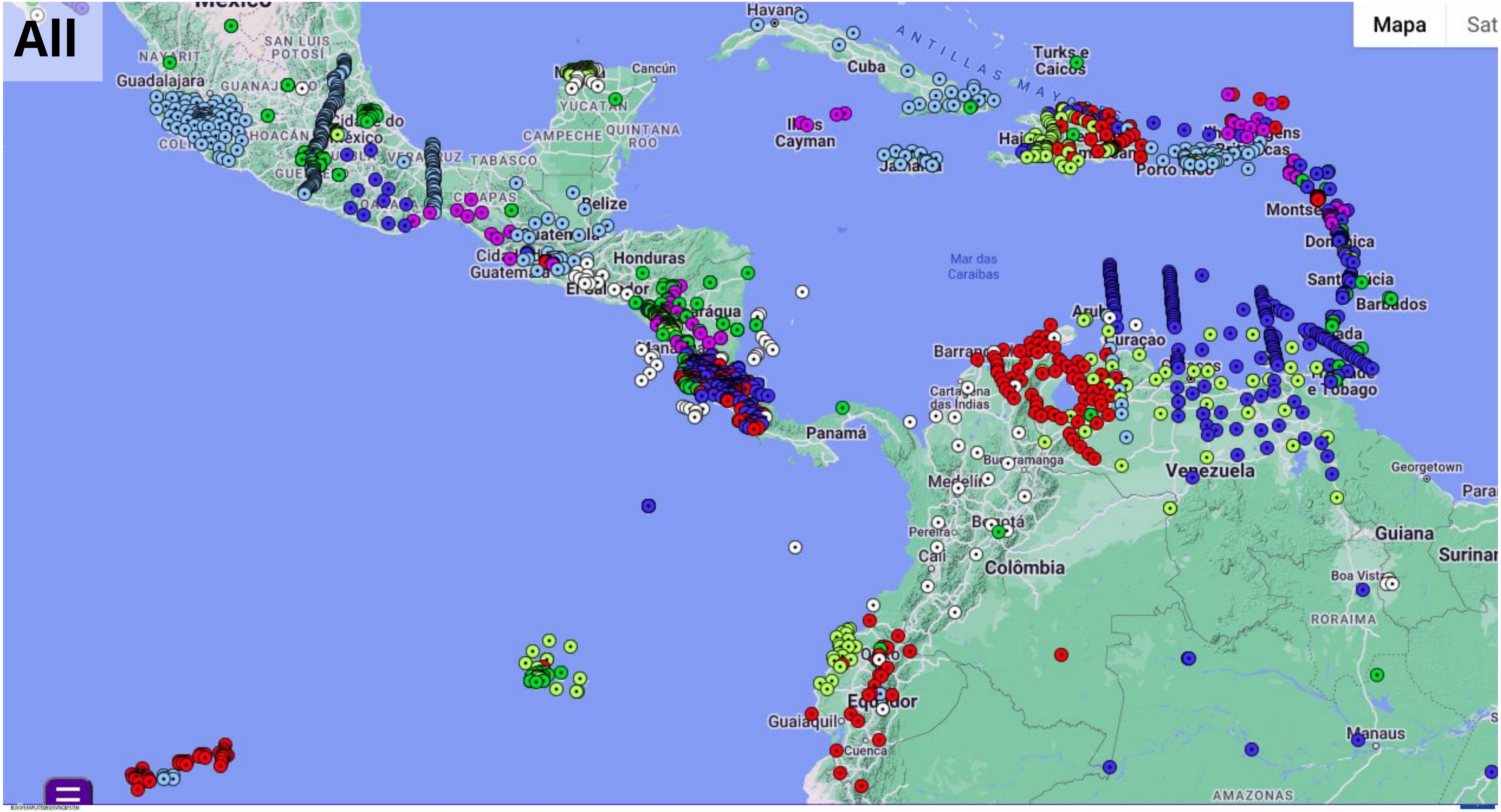
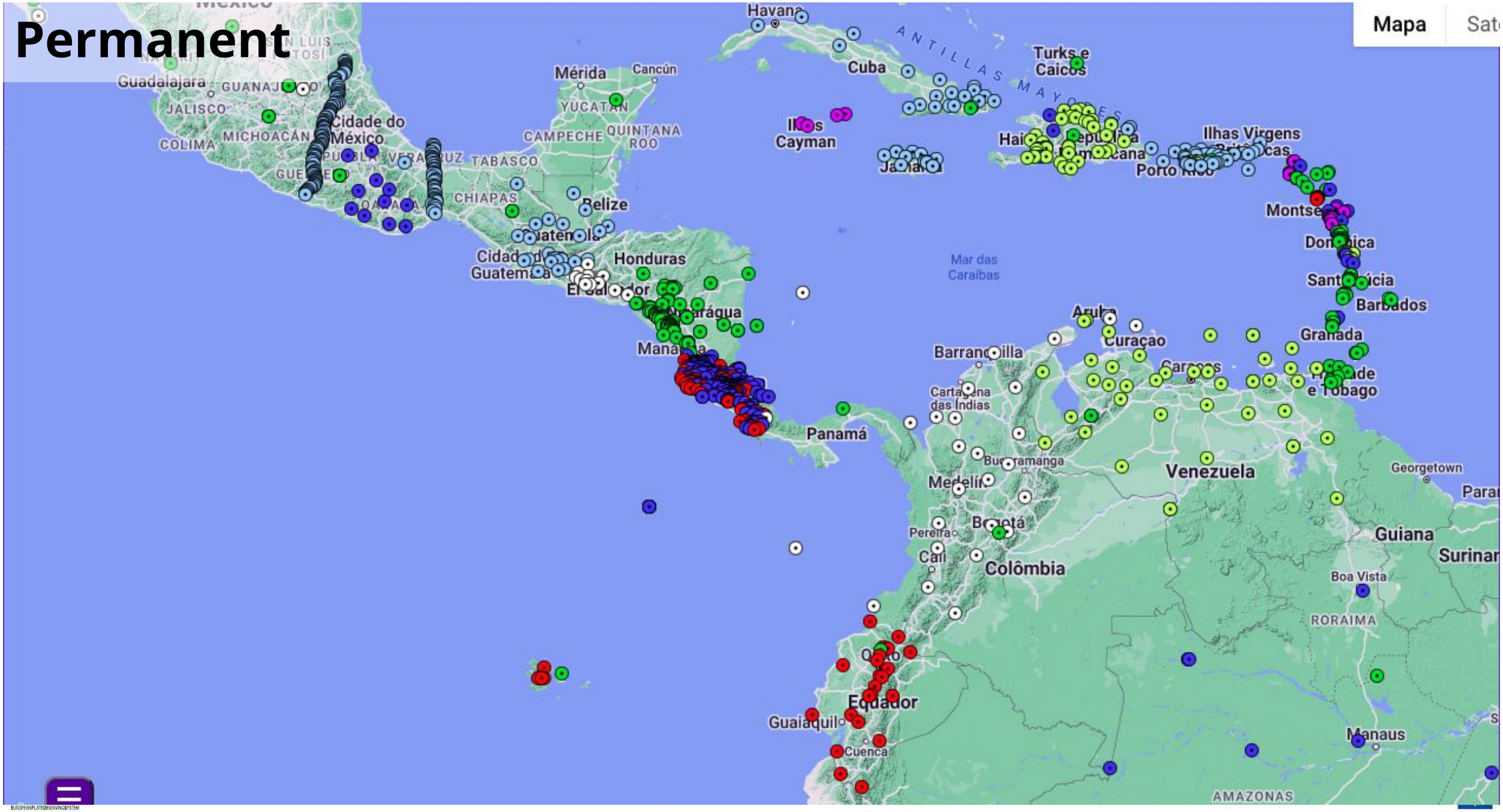
All


Mapa
Havana
Cuba
Turks e
Caicos
Cayman
Guadalajara
SAN LUIS
POTOSÍ
Cancún
YUCATÁN
CAMPECHE
QUINTANA
ROO
TABASCO
Belize
Honduras
Panamá
Mar das
Caraíbas
Barbados
Venezuela
Georgetown
Guiana
Boa Vista
RORAIMA
Colômbia
Bogotá
Medelín
Cali
Pereira
Cuenca
Manaus
AMAZONAS

Permanent


Mapa
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CAMPECHE
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TABASCO
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Belize
Honduras
Guadalajara
JALISCO
COLIMA
MICHOACÁN
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Georgetown
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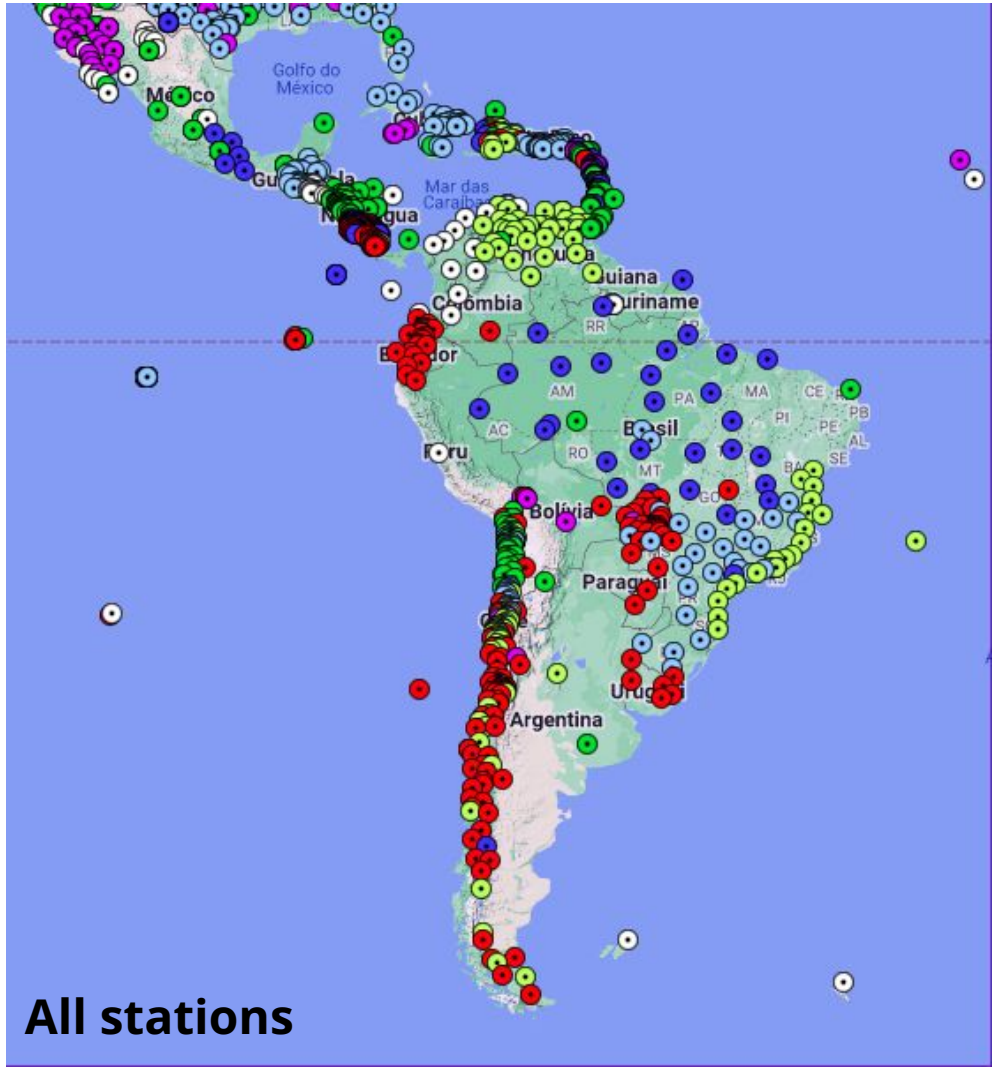
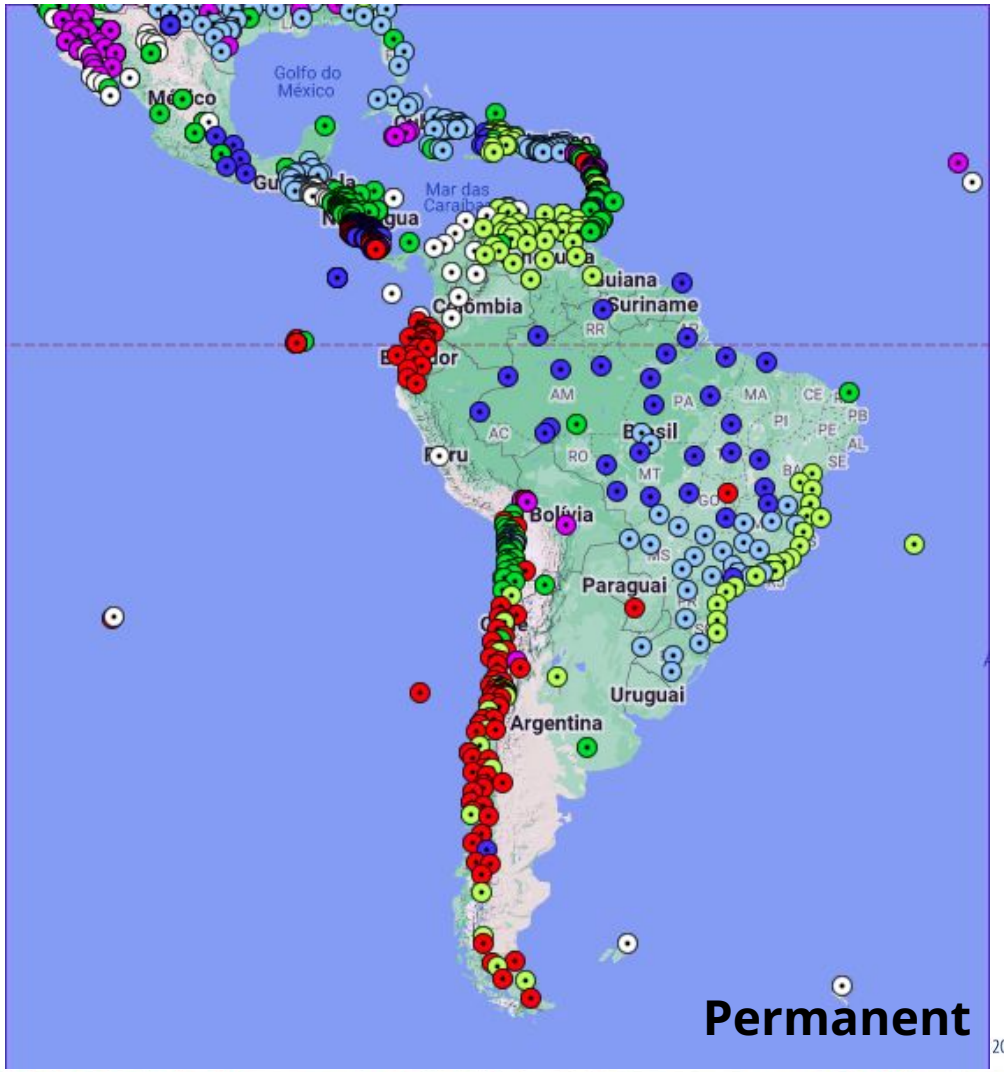
Today Picture





With the increase availability of technical solutions and bandwidth for data sharing, some national networks share their data in a peer-to-peer style.

They don't broadcast into the federated level.

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Continental countries & territories

Mexico		
Guatemala		
Honduras		1
El Salvador		
Nicaragua		
Costa Rica		
Panama		1
Colombia		
Venezuela		
Ecuador		
Peru		
Bolivia		
Chile		
Paraguay		1
Uruguay		no broadcast
Argentina		
Brasil		incomplete at IRIS
Guyana		no broadcast
Suriname		?
Guyana Francesa		1

- No MDA
- MDA findable (Restric.)
- MDA findable (Shared)

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Caribbean

- More than 20 countries/territories alone
- Some networks are shared between countries/territories (like TR and WI) - those are normally indicated as OPEN
- Some countries/territories have more than one net / some open / some restricted
- Normally well developed networks

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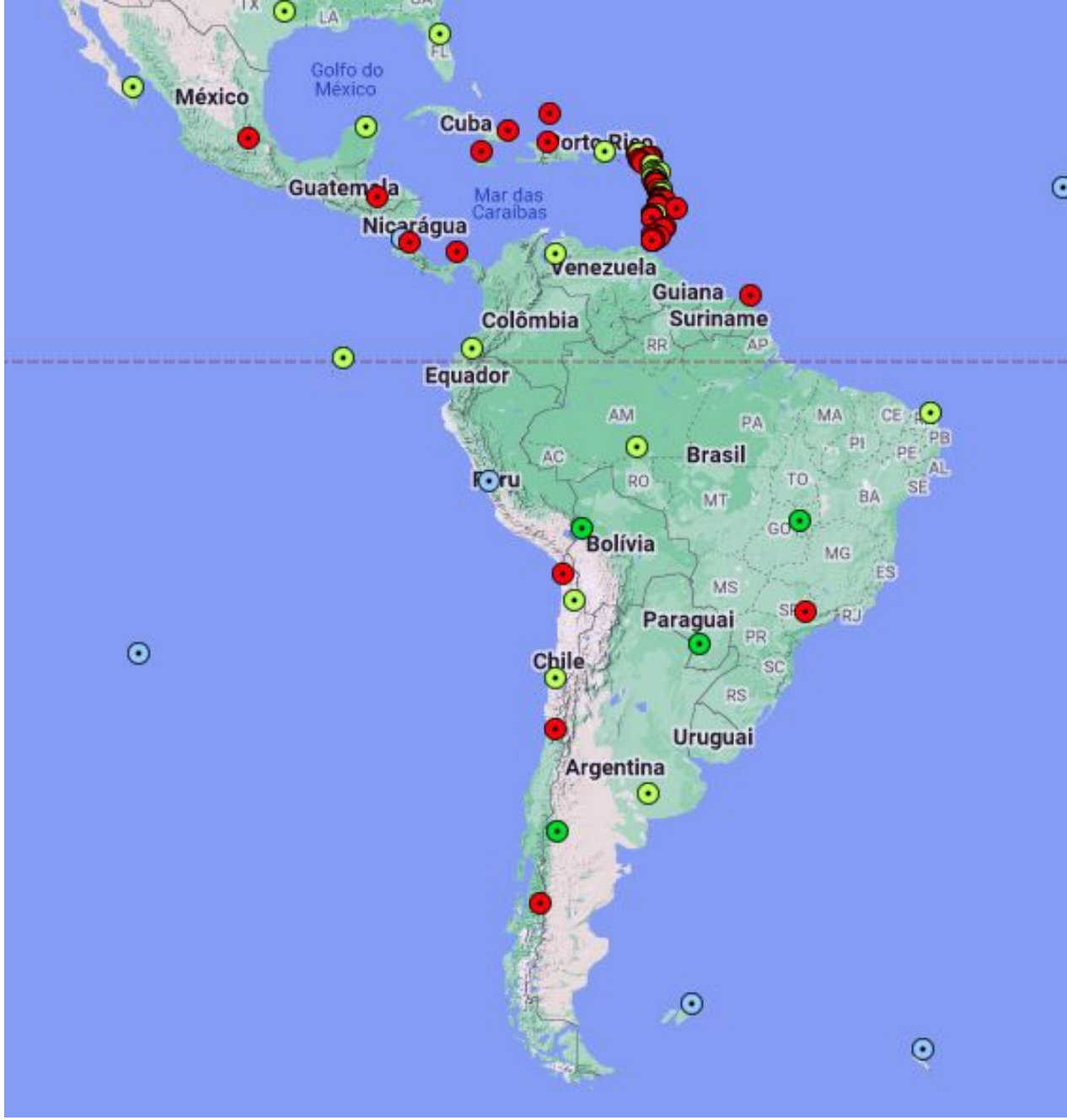
International

- Networks:
  - Continental: II, IU, G, GT
  - Caribbean: TR, WI and CU
- Longest operating times.
- Were in many cases responsible for the creation of seismology groups in different countries



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CTBTO

- ➔ Policies imposed by CTBTO
- ➔ CTBTO has agreements with many different countries, although there is a possibility to access data between signataries, CTBTO ways of working is not effective.
  - ◆ Non standard tools and formats
  - ◆ CTBOT does not share data, but rely on operators to do it.

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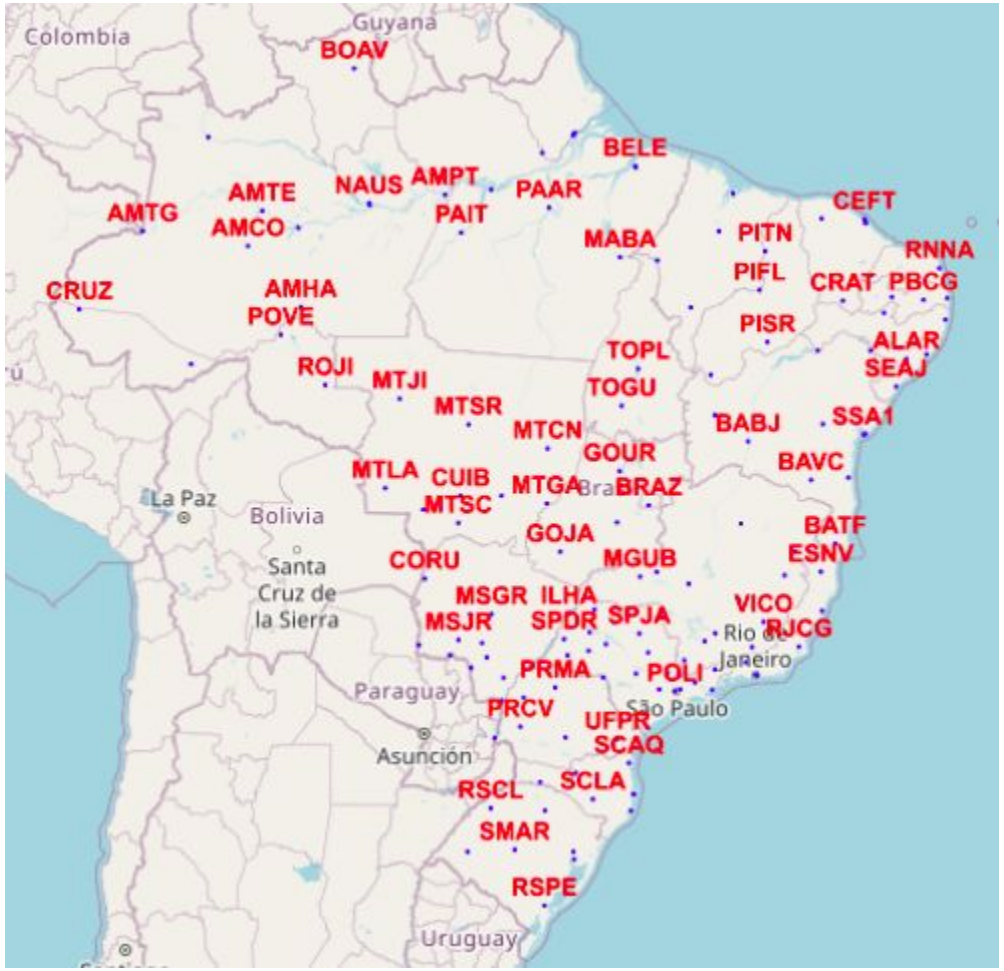
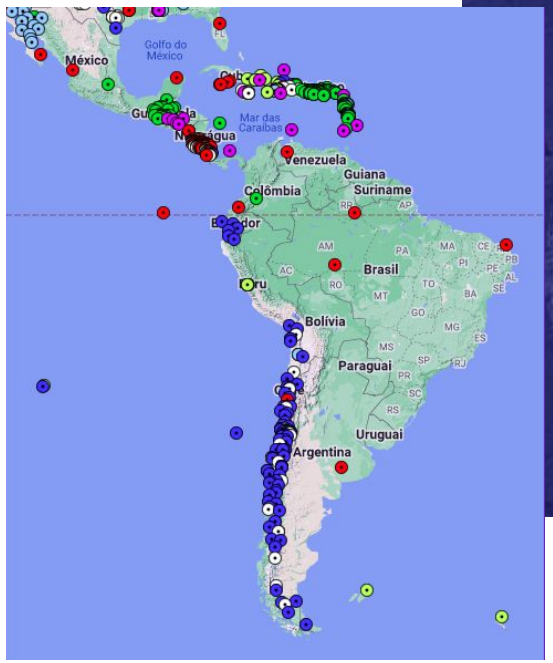
Other data



- Examples are:
  - Brazilian Network of Continuous Monitoring (GNSS) - RBMC
  - GNSS Chile
  - Accelero-metric networks



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Final remarks

- Data policy should affect data and not metadata, this is something that has been discussed (*Chile, 2015*)
- Parametric data is also data, so a policy should be set
  - When you set a policy you are forced to think about sharing
- Many of those catalogs contains a bare location, time and magnitude information, lacking phase readings and other important information.
  - Is this enough for the future?

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Final remarks

- What are we doing with the historic data?
  - lower seismic rates = higher importance of historical data in building plans for the future
- Registered Data Centers
  - USP is the only listed datacenter in Latin America but ...
  - Maybe we are missing something while moving from a centralized to a distributed datacenter technology and policy.
  - IRIS does not have data for many listed stations, or only lists old (+5 years) data.

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Thank you!

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