

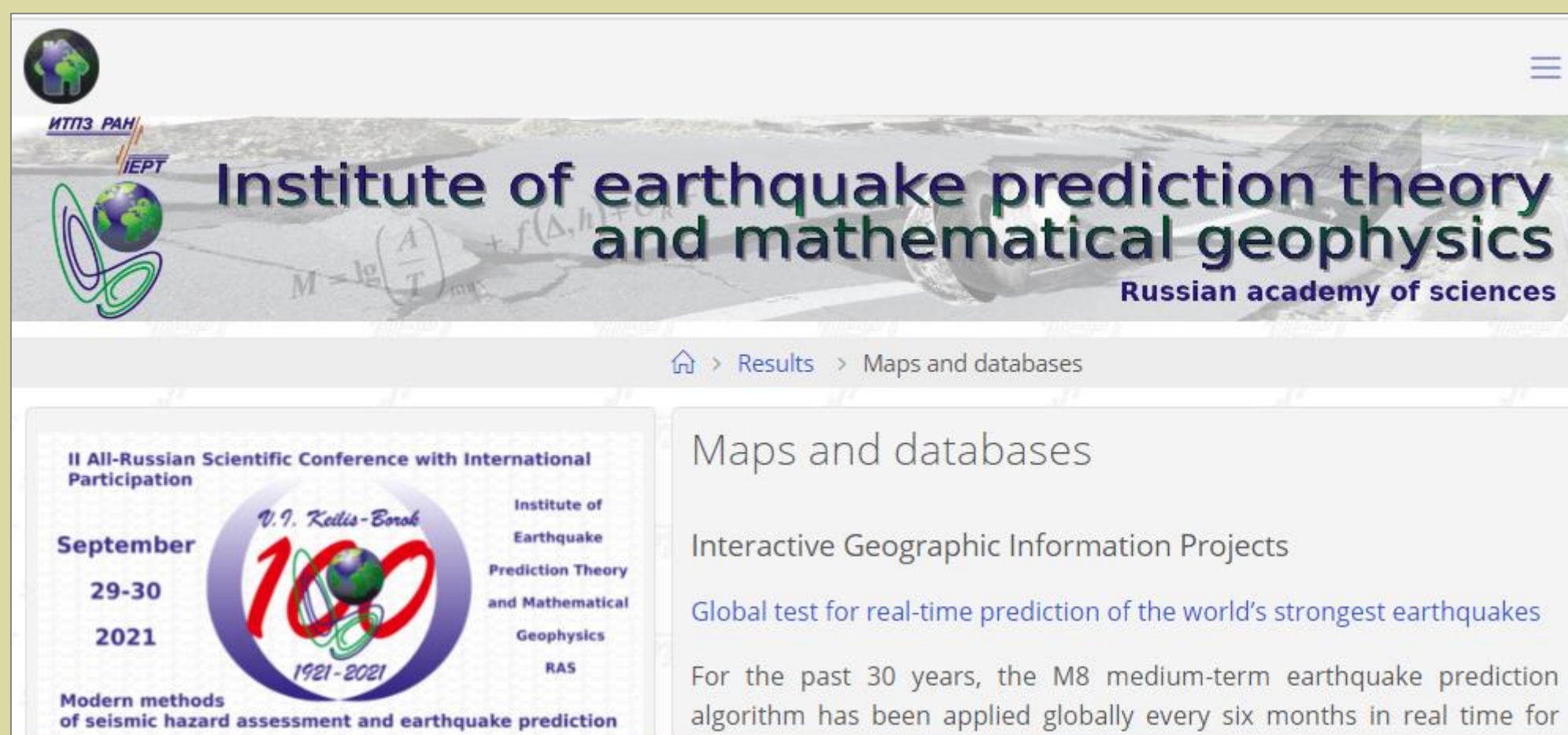
WEB-GIS projects at the Institute of Earthquake Prediction Theory and Mathematical Geophysics, Russian Academy of Sciences

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- Methods and technologies of geoinformatics, Open Data and Open Source software are used in scientific institutions around the world. One of the Open Source's forms is a web geographic information system (web gis) to represent the spatial data of scientific projects to a wide audience of thematic users via web browsers [Advances in Web-based GIS ..., 2011]
- The page of interactive geoinformation projects of the Institute shows the projects results published in the web gis (“Expert forecast of the world strongest earthquakes” and “Lineaments and places of possible occurrence of strong earthquakes”). There is a reference to the external project AFCAST, an automated system for assessing the danger of strong aftershocks in near real time

Web-gis projects are available on the official Institute's website in the section of Maps and Databases



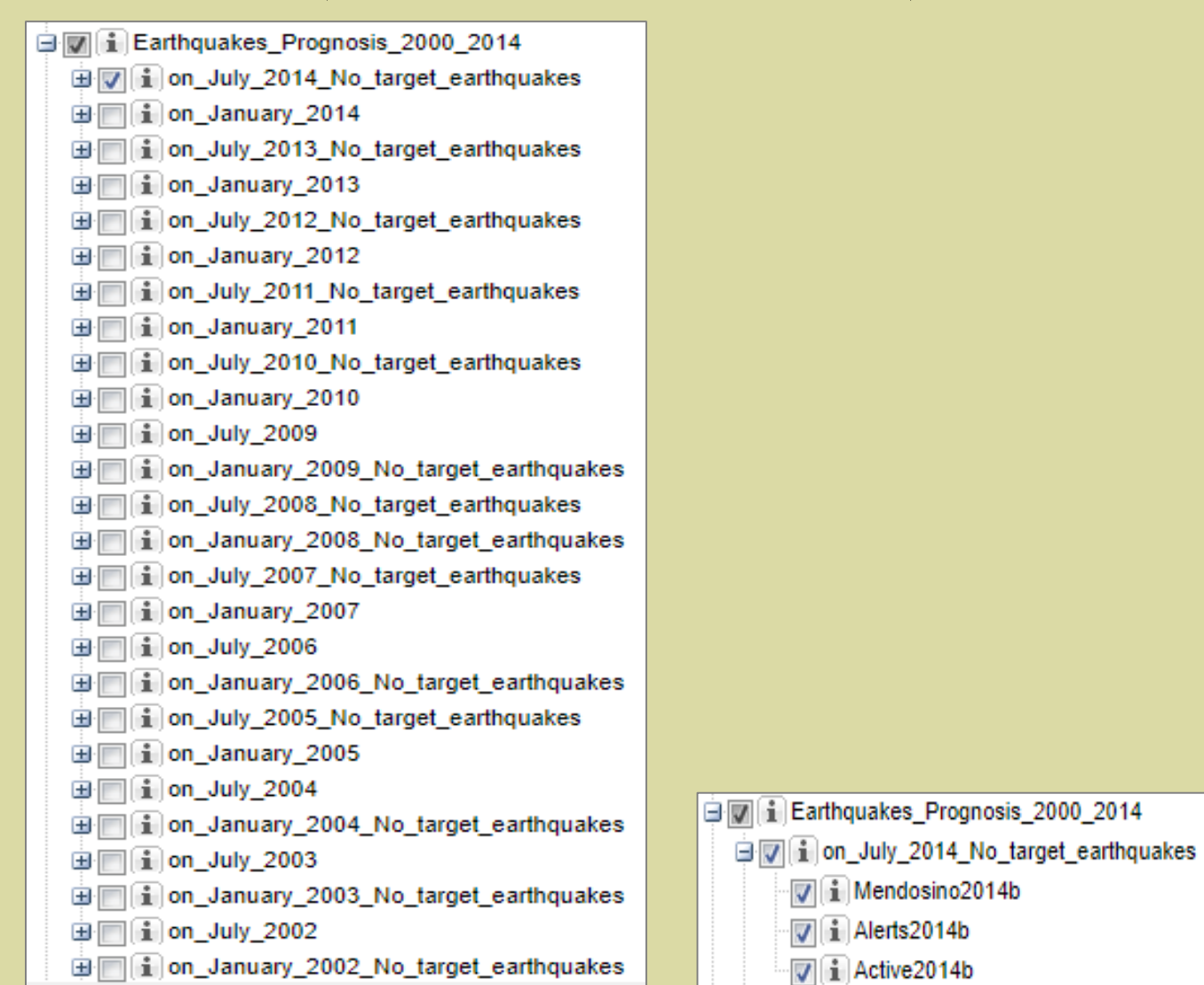
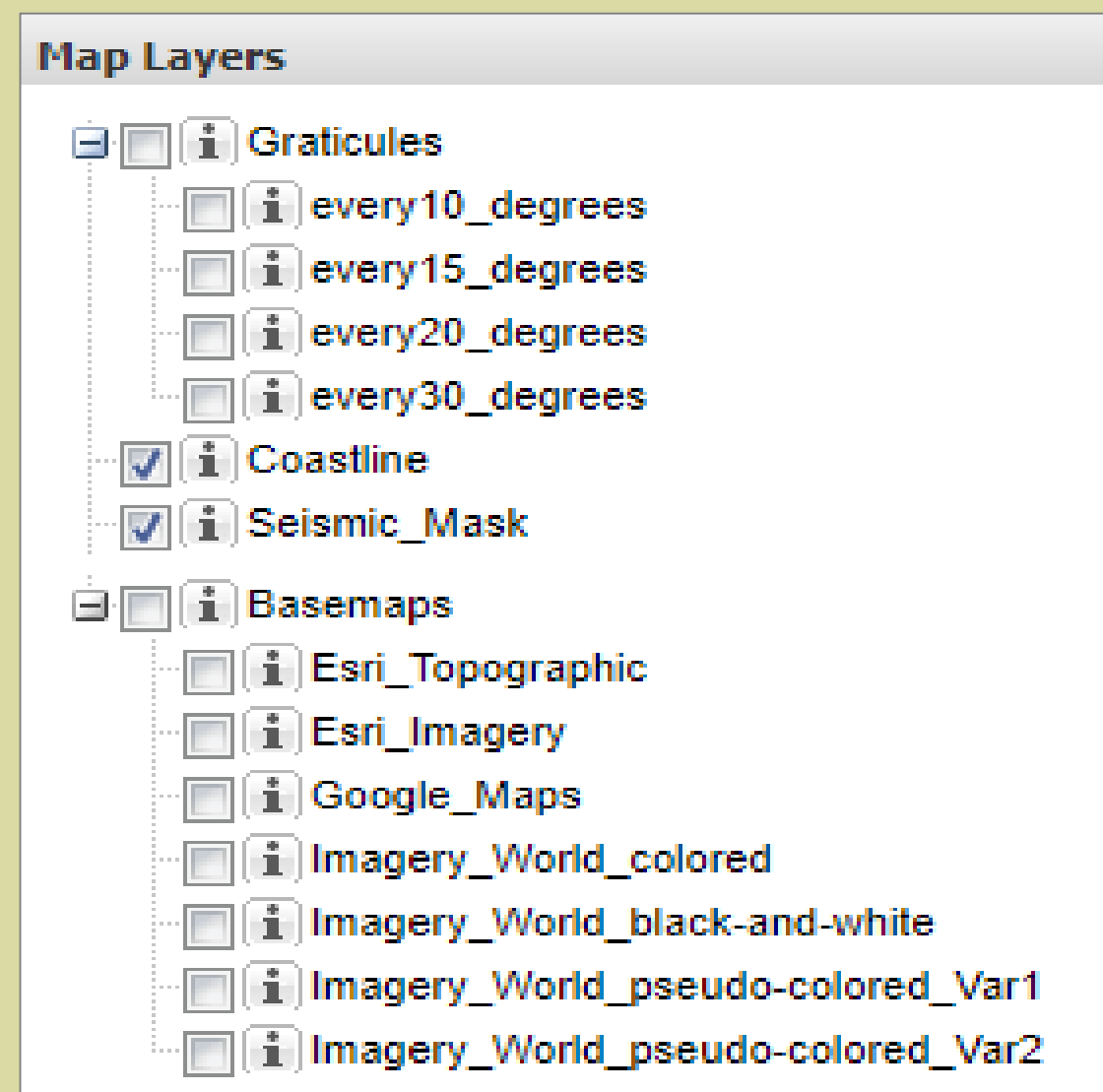
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Expert forecast of the world strongest earthquakes

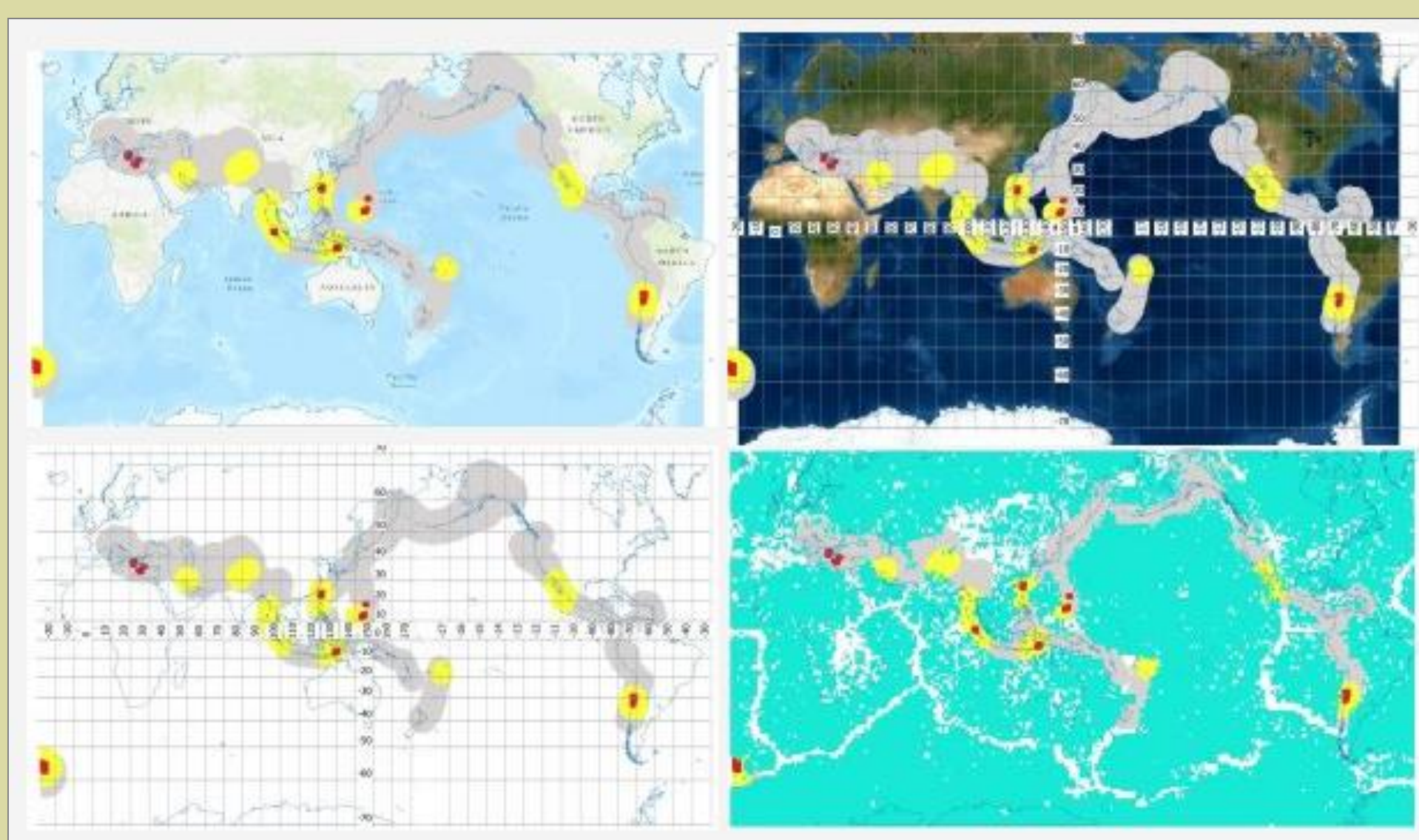
- Totally data cover the time period from 1985 to the present, earthquake forecasts are formed by the Institute twice a year (as of January 1 and July 1), methodologically based on the papers [Keilis-Borok, Kossobokov, 1990; Healy et al., 1992; Kossobokov, 1997]
- There are two QGIS Desktop projects: “Common Access 2000-2014” and “Special Access 2015 and later”. There is also a collection of archived maps for 1985-1999 grouped as JPEG files
- Access to the Institute's data is organized by user groups and is divided depending on the data relevance
- Desktop QGIS projects containing general geographic layers (external map-services) and thematic data at the Institute (internal databases) are published in the web-gis form

Common layers for all sub-projects

Layers of M 8.0 for 2000-2014 (Common Access)

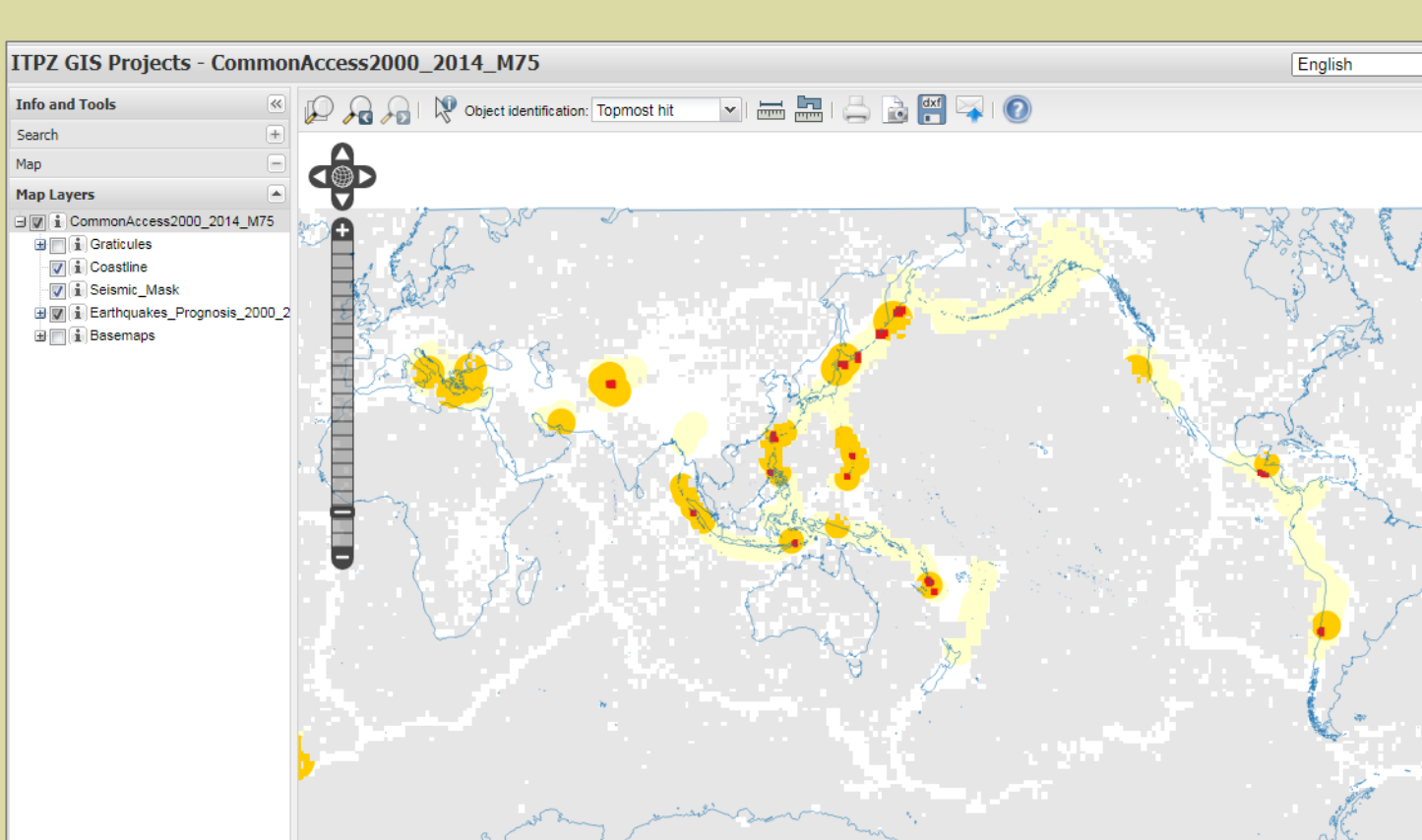


Basemaps and raster seismics: design options

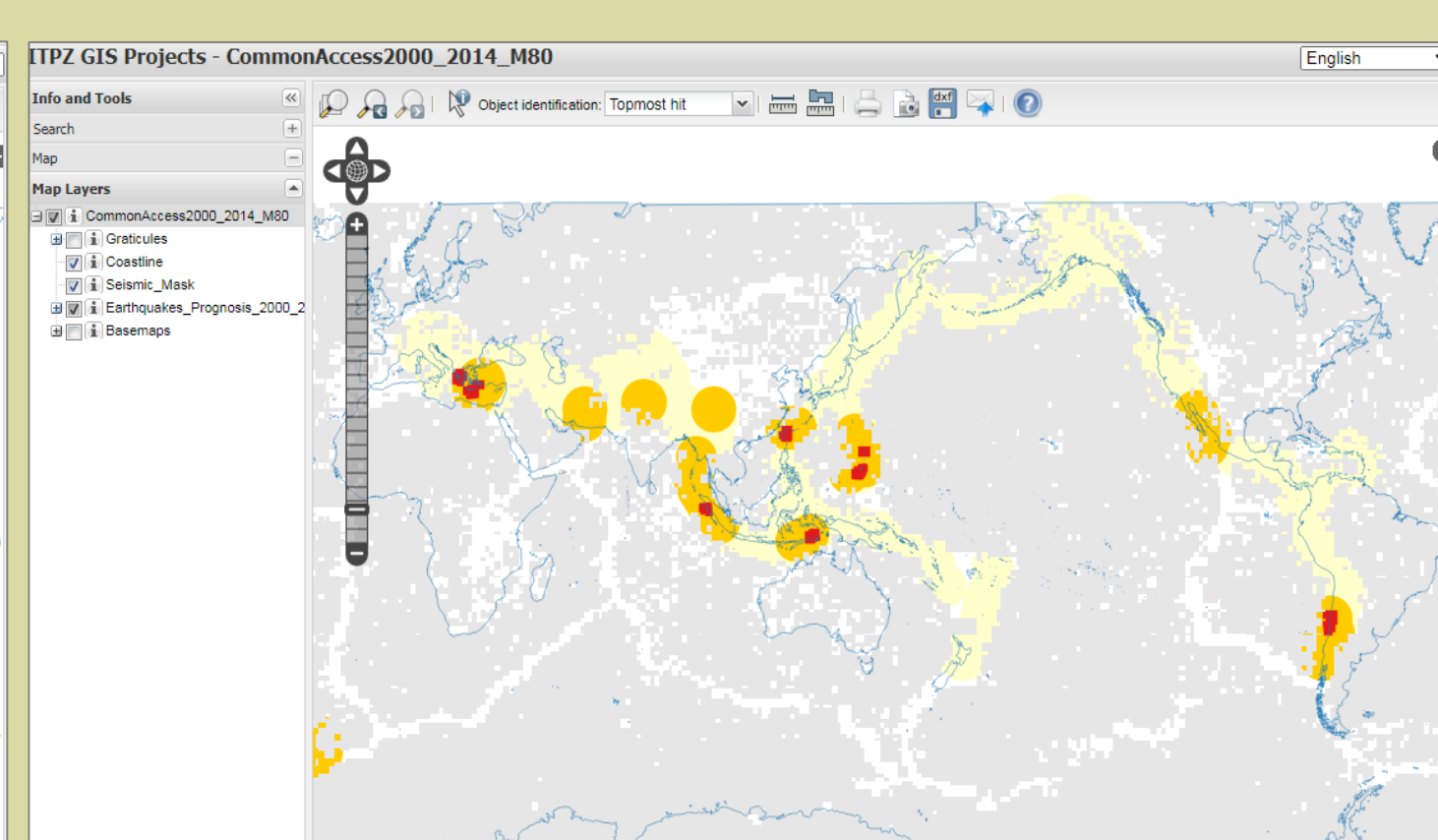


2000-2014
M 7.5

2000-2014
M 8.0



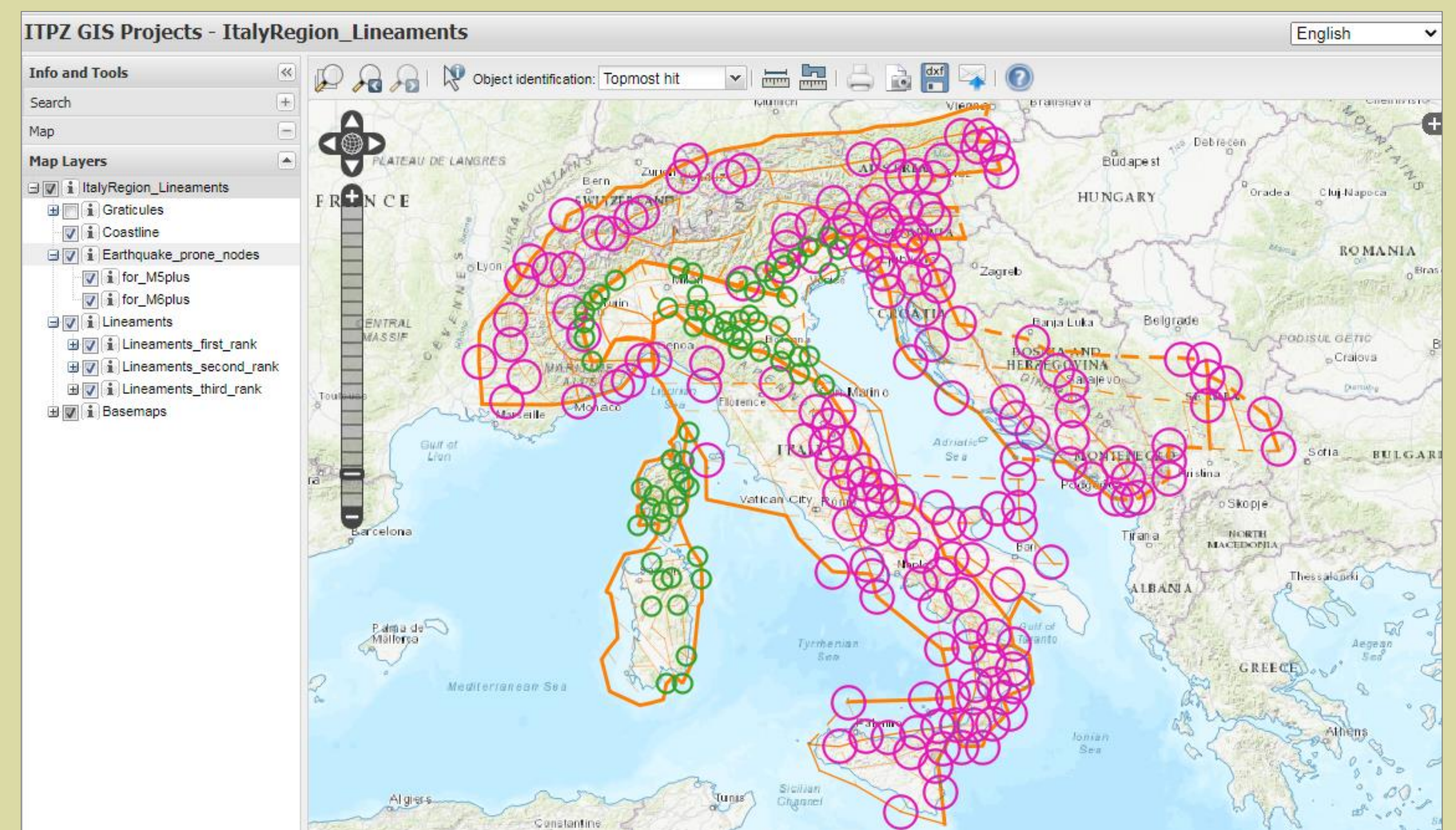
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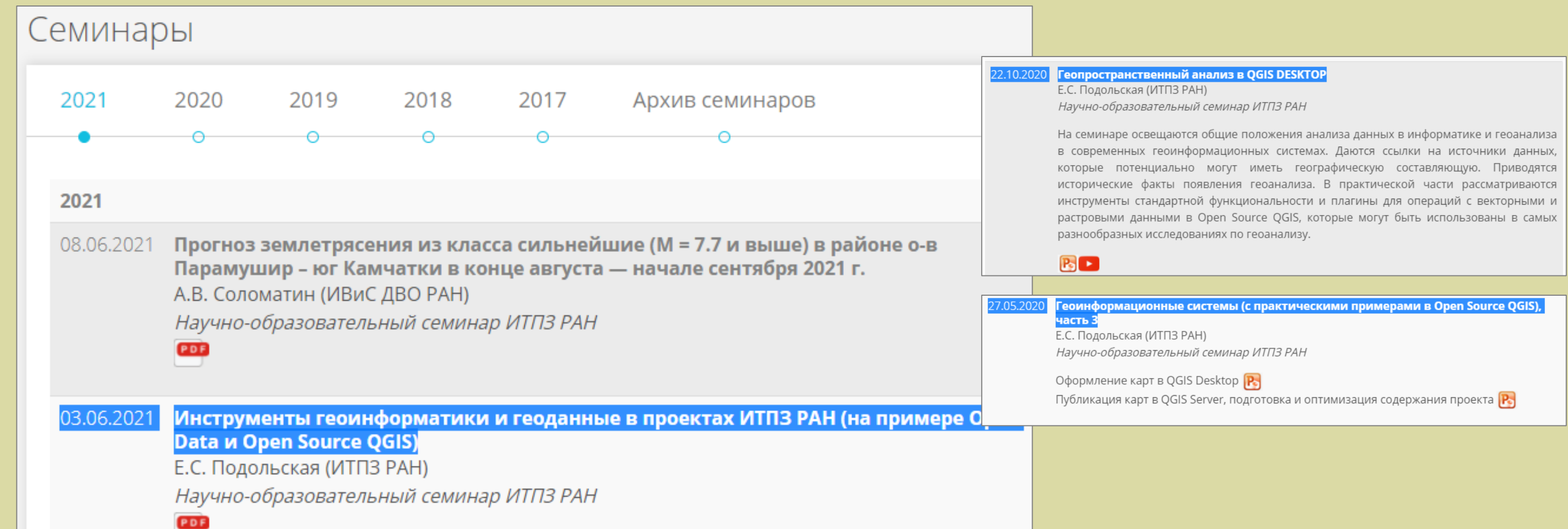
Lineaments and places of strong earthquakes's possible occurrence

- The Lineaments project summarizes the results on the recognition of places of strong earthquakes's possible occurrence within Italian region
- The studies [Gorshkov et al., 2002, 2003, 2004, 2009] have shown that strong earthquakes are confined to the intersections of tectonically active fault zones - morphostructural nodes, the location of which is determined by the method of morphostructural zoning. Nodes's classification on seismic hazard degree is performed by the pattern recognition algorithms
- Earth prone nodes and Lineaments by rank are grouped in QGIS Desktop project and published in web gis



<https://www.itpz-ran.ru/resultaty/maps-and-databases/lineaments-italyregion/>

Seminars on GIS-related matters at the Institute



<https://www.itpz-ran.ru/ru/dejatelnost/seminars/>

Conclusions and future work

- Web-gis implementation allows to interact with the users by providing them with the maps and data from the Institute's databases on several projects
- Further expansion of web publishing is possible for other projects in 2D and 3D forms

References

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