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Seismicity map tools for earthquake studies

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We report on the development of new and online set of tools for use within Google Maps, for earthquake research. We demonstrate this server based and online platform (developped with PHP, Javascript, MySQL) with the new tools using a database system with earthquake data. The platform allows us to carry out statistical and deterministic analysis on earthquake data use of Google Maps and plot various seismicity graphs. The tool box has been extended to draw on the map line segments, multiple straight lines horizontally and vertically as well as multiple circles, including geodesic lines. The application is demonstrated using localized seismic data from the geographic region of Greece as well as other global earthquake data. The application also offers regional segmentation (NxN) which allows the studying earthquake clustering, and earthquake cluster shift within the segments in space. The platform offers many filters such for plotting selected magnitude ranges or time periods. The plotting facility allows statistically based plots such as cumulative earthquake magnitude plots and earthquake magnitude histograms, calculation of ‘b’ etc. What is novel for the platform is the additional deterministic tools. Using the newly developed horizontal and vertical line and circle tools we have studied the spatial distribution trends of many earthquakes and we here show for the first time the link between Fibonacci Numbers and spatiotemporal location of some earthquakes. The new tools are valuable for examining visualizing trends in earthquake research as it allows calculation of statistics as well as deterministic precursors. We plan to show many new results based on our newly developed platform.