

ABSTRACT

The main goal of this thesis is to analyze the statistical properties of seismic catalogues of natural and induced seismicity, identify similarities and differences. We compare statistical temporal and magnitude information contained in different types of earthquake catalogues. Six seismostatistical criteria used for identification of natural swarms and mainshock-aftershock earthquake sequences are applied to 10 different catalogues of natural and induced seismicity.

We did not find a method to reliably distinguish between natural and induced seismicity based only on temporal and magnitude information contained in catalogues. We show that induced seismicity catalogues are similar to natural earthquake swarms.

We report how the set of 6 criteria presented here can be used for distinguishing between mainshock-aftershock sequences and swarm seismicity. We also show that none of the tested criteria can be used independently for distinguishing between different types of seismicity.