

## Statistical Analysis of Earthquakes Recorded in Japan in 2022

**Authors :** M. H. Mousavi, M. Maghouli

**Abstract :** Reviewing seismic activities in Southeast Asia, especially Japan, holds significant importance. This region is known as one of the most seismically active regions in the world and has a history of many destructive earthquakes. In 2022, we have seen an increase in the number of earthquakes compared to the ten-year period from 2013 to 2022, and progress in earthquake monitoring equipment and methods has played an essential role in their more accurate identification. An analysis of moderate to large earthquakes and their spatial distribution shows that 2022 is poised to surpass previous years as the most earthquake-active in a ten-year period from 2013 to 2022. This intensification of seismic activity has caused significant damage to Japan's infrastructure and security, emphasizing the urgent need for increased public awareness and preparedness measures against such natural disasters. Given the rising earthquake risk, international collaboration for enhancing early warning systems and strengthening infrastructure resilience is of paramount importance. This paper examines the earthquake activities that occurred in 2022. Using comprehensive earthquake statistics, it provides a thorough comparison of the energy released by these earthquakes with major earthquakes in the past seven decades. The purpose of this comparative analysis is to clarify global earthquake patterns and potential trends. By understanding these trends, we can better prepare for future earthquake events and mitigate their devastating consequences.

**Keywords :** Earthquake, Japan, Earthquake statistics, Seismic energy, Preparedness

**Conference Title :** ICGG 2024 : International Conference on Geology and Geophysics

**Conference Location :** Istanbul, Türkiye

**Conference Dates :** August 15-16, 2024