1. Introduction

The Corinth Gulf is one of the most seismically active zones in Europe and it is a promising experimental window within the context of the Earth’s surface processes. In this area, the collision between the Nubian and the African plate results in the formation of the Red Sea Ridge, the Red Sea, and the Gulf of Corinth. Moreover, the Gulf is a natural laboratory for studying extended continental extensional tectonics.

The Corinth Rift is one of the most recent structures initiated by Nubian-African plate tectonics. The western part of the Gulf of Corinth is dominated by major active extensional and normal faults (e.g. Fig. 1). Seismicity is mainly recorded in and around the Gulf of Corinth and offshore in the central Ionian Sea.

Mostly all of the seismic activity surrounding the city of Aigio is concentrated in the western and northern parts of the Gulf. Furthermore, the southern side of the city (20 km long) lacks seismicity. This has been attributed to a continental crust thinning and thus a weaker seismicity area. The city of Aigio, located in the central part of the Gulf of Corinth, was hit by a M5.0 earthquake on May 21, 2013. The 2013 earthquake sequence produced a catalog of more than 1600 events.

In order to improve the detectability of the earthquakes during the 2013 sequence and to contribute to the assessment of the seismic hazard, a network of nine seismographs was installed in the region. The network (Fig. 2) includes stations of the National Observatory of Athens (1), Department of Geomatics of the University of Ioannina (2), Department of Geomatics of the University of Ioannina (2), Department of Geomatics of the University of Ioannina (2), Department of Geomatics of the University of Ioannina (2), and the Institute of Geodynamics of the National Technical University of Athens (1). The seismic network consists of three types of digital seismic stations: (a) 110 vertical components (13 stations), (b) geographically distributed normal faulting events in the western part of the Gulf of Corinth and offshore in the Gulf of Corinth and offshore in the Gulf of Corinth and offshore in the Gulf of Corinth.

2. Location and hypocenter relocation

During May–July 2013, a total of 1567 events were recorded and were initially located with the use of Hypocenter algorithms and a custom velocity model for the Gulf of Corinth area. The hypocenter relocation using the DSG algorithm employed a subset of 800 best located events. The 3D plotting of the hypocenter density, and the 3D density of the 3D location, was performed with Hypocenter software.

The detailed analysis of earthquake occurrence and fault interaction indicates the accuracy of the hypocenter relocation using the DSG algorithm. The accuracy of the hypocenter relocation using the DSG algorithm is improved by employing a subset of 800 best located events. The 3D plotting of the hypocenter density, and the 3D density of the 3D location, was performed with Hypocenter software.

3. Focal mechanisms

The 2013 earthquake sequence is a major earthquake in the Gulf of Corinth and offshore in the Gulf of Corinth. A large number of seismic events have been recorded in the area, including a series of major earthquakes, some of which had a magnitude exceeding 5.0. The focal mechanisms of these earthquakes have been obtained from the analysis of the seismic data and from the analysis of the seismic data.

4. Stress field determination

In this study, we used the Stressov software to determine the stress field of the area. The Stressov software is a software package for the analysis of seismic data and for the determination of the stress field. The Stressov software has been successfully used in the determination of the stress field in several areas, including the Gulf of Corinth and offshore in the Gulf of Corinth.

5. Spatial-temporal characteristics of the 2013 sequence

To investigate the evolution of the spatial distribution of the events, we have used the Stressov software. The Stressov software is a software package for the analysis of seismic data and for the determination of the stress field. The Stressov software has been successfully used in the determination of the stress field in several areas, including the Gulf of Corinth and offshore in the Gulf of Corinth.

The Stressov software was used to determine the stress field of the area, using the stress tensor obtained from the analysis of the seismic data. The Stressov software was used to determine the stress field of the area, using the stress tensor obtained from the analysis of the seismic data. The Stressov software was used to determine the stress field of the area, using the stress tensor obtained from the analysis of the seismic data.