The Pollino seismic sequence: shear wave splitting, fracture field and active stress [poster]

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Citation: PASTORI, M. ... et al, 2018. The Pollino seismic sequence: shear wave splitting, fracture field and active stress. Presented at the 36th General Assembly of the European Seismological Commission (ESC), Valletta, Malta, 2-7 September 2018, ESC2018-S10-1002.

Additional Information:
- This is a conference poster.

Metadata Record: https://dspace.lboro.ac.uk/2134/34670

Version: Published

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THE POLLINO SEISMIC SEQUENCES: SHEAR WAVE SPLITTING, FRACTURE FIELD AND ACTIVE STRESS

Poster
ESC2018-51002-1002

Abstract

In the years 2000 and 2004 in the Apennines-Calabria arc, a boundary in the Pollino region, a long seismic sequence took place. The area is subject to Northeast - Southeast extension, which results in a complex system of normal faults striking North-East-South-West, nearly parallel to the Apennine mountain range.

The seismic sequence includes more than 6000 earthquakes in the Pollino region, the maximum magnitude recorded is Ml 6.0 and it happened in October 29th 2002; after about two years of ongoing activity, the peculiar temporal evolution of the seismic sequence allows to catalogue it as a swarm. Here we describe the main seismological characteristics of this seismic sequence and characterize the fracture field of the region. We analyse the effects of shear wave splitting, determining the anisotropic parameters in the crust. These parameters yield clues and insights that may help understanding the physical mechanism behind the seismic events. The study area, near the Pollino massif, is characterized by the presence of gabbroic rocks that make a complex system of normal faults striking North-East - South-West, nearly parallel to the Apennine mountain range. The maximum magnitude recorded is Ml 6.0, and it happened in October 29th 2002; after about two years of ongoing activity, the peculiar temporal evolution of the seismic sequence allows to catalogue it as a swarm. Here we describe the main seismological characteristics of this seismic sequence and characterize the fracture field of the region.

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Geological Setting

The study area, near the Pollino massif, is characterized by the presence of gabbroic rocks that make a complex system of normal faults striking North-East - South-West, nearly parallel to the Apennine mountain range. The maximum magnitude recorded is Ml 6.0, and it happened in October 29th 2002; after about two years of ongoing activity, the peculiar temporal evolution of the seismic sequence allows to catalogue it as a swarm. Here we describe the main seismological characteristics of this seismic sequence and characterize the fracture field of the region.

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