
Recent upgrades of the NOA database of active faults in Greece (NOAFAULTs)

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Abstract

The NOAFAULTs database of active faults was published in 2013 (versions 1.0 & 1.1). In this paper we present the upgrades comprising the newer version of the database (version 2.1). NOAFAULTs was created towards compiling a digital database of fault geometry and additional attributes (character of faulting, past seismicity etc) primarily to support seismicity monitoring at the National Observatory of Athens (NOA). It has been constructed from published fault maps in peer-reviewed journals since 1972 while the number of the scientific papers that were included is 110. The standard commercial software ARC GIS has been used to design and populate the database. In the new version, details on fault geometry, such as the strike, the dip-angle and the dip direction, and kinematics for each individual fault are included. For well-studied faults, information about the slip rate or the creep or the co-seismic slip is reported. The fault layer was produced by on-screen digitization and is available to the scientific community in ESRI shapefile (SHP), KML/KMZ and TXT formats in WGS84 projection. In this version of the database, we continue to focus on the active faults of the upper (Aegean + Eurasian) plate and the back-arc region of the Hellenic Arc, in general. A number of 2437 faults are now included. 95% of the active faults are normal faults, 3% are strike-slip faults and only 1% represent the reverse faults. Also, data on instrumental and historical seismicity was recorded for 163 and 104 active faults, respectively. So far, the spatial correlation between epicentres of strong seismic events and location of active faults allows the identification of 57 events. The maximum magnitude of those events ranges between $M_w=5$ to $M_w=7.4$. The NOAFAULTs database shows that the 50% of active faults imply high seismic risk level in the broader area of Greece.

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