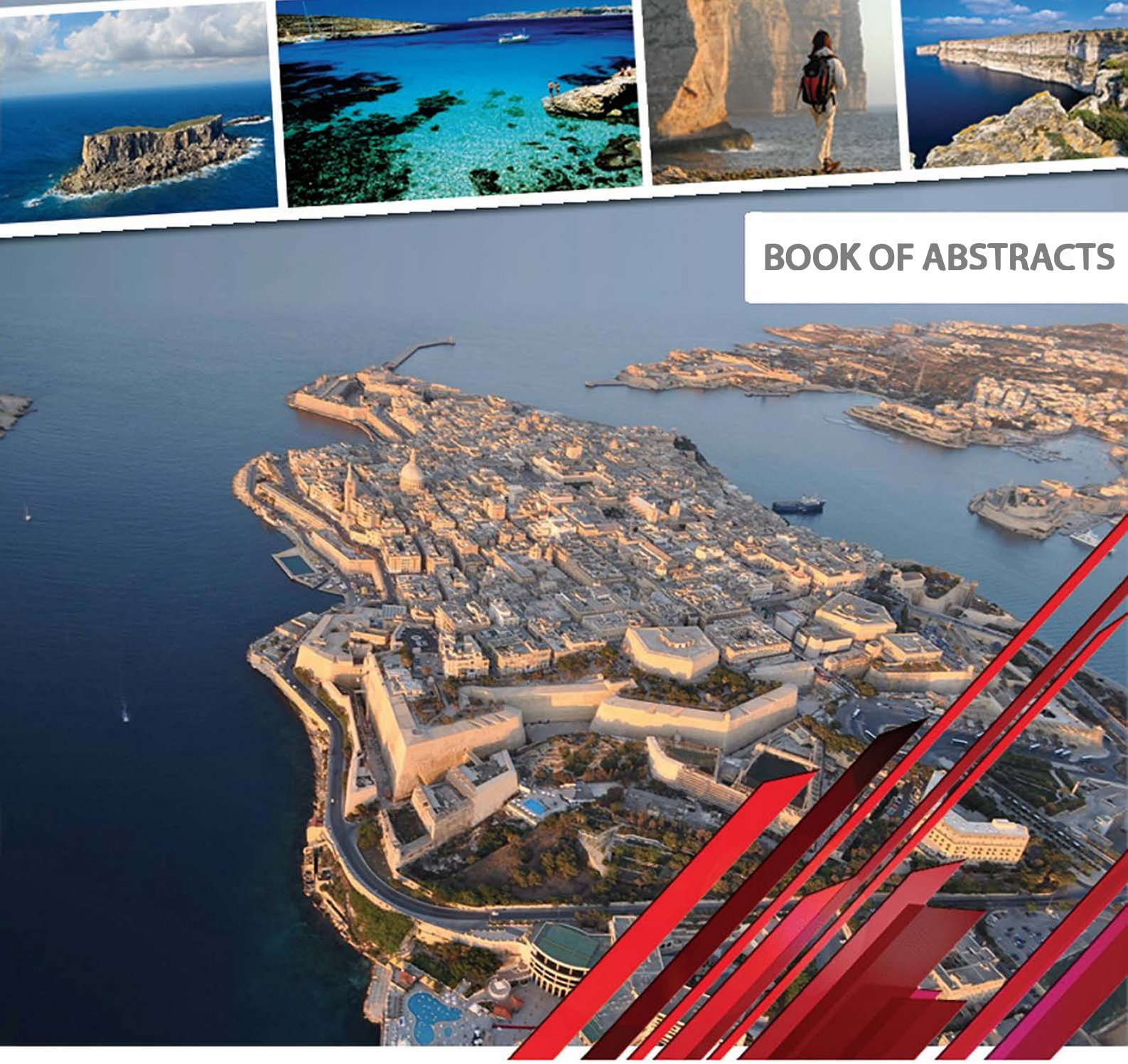
BOOK OF ABSTRACTS



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ENVIRONMENTAL EFFECTS SUPPLIED IN THE NEW CFTI5MED

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A new version of the Catalogue of Strong Earthquakes in Italy and in the extended Mediterranean area, termed CFTI5Med, was released in 2018 by Guidoboni et al. (http://storing.ingv.it/cfti/cfti5/). The Catalogue provides a unique wealth of information on the historical seismicity of Italy that is now fully accessible through a completely re-designed web-interface. CFTI5Med does not only contain parametric data and macroseismic intensities assigned to individual localities, but provides a complete account of the territorial impact of each investigated earthquake sequence through textual descriptions of the earthquake effects. In addition to reporting the effects on the built environment, the catalogue collects and describes also the effects induced by earthquakes on the natural environment, including ground cracks, liquefaction, landslides, rockfalls, changes in the discharge rate of rivers and springs, flooding and tsunami effects. We reinterpreted in a geological perspective, georeferenced and reprocessed over 2,300 descriptions of earthquake-induced effects on the natural environment associated with about 200 different earthquake sequences. The effects caused by each sequence on the natural environment are shown as a list of the types of observed phenomena and described in historical-critical comments for each individual locality where such effects were reported. The relevant bibliography is supplied in an organized form in each comment, allowing the reader to access the original sources used to investigate the specific event. We classified the effects on the natural environment into 30 categories, grouped into 5 macro-groups: changes in the landscape (including landslides, ground cracks, ground uplift or subsidence, etc.), changes in the watercourses and lakes, changes in groundwater (including liquefaction effects), changes in the coastline (including tsunami effects), and others such as gas emission and light phenomena. Of these, nearly 50% are landslides and ground cracks, 25% are changes in groundwater (most of which liquefaction effects); the remaining effects are mostly gas emissions and tsunami evidence. All the effects on the natural environment contained in CFTI5Med can be accessed in a user-friendly web-GIS environment, through webpages describing the effects of individual earthquake sequences and webpages describing the seismic history of individual localities. In addition, we implemented also a page dedicated specifically to the information on the earthquake effects on the natural environment, allowing the user to apply filters by categories and display the effects in a clear georeferenced map. As it is known that earthquake-induced effects on the natural environment tend to occur where they have already occurred in the past, the possibility of an immediate use of these data is crucial in case of an emergency. The effects reported in CFTI5Med are located as points coincident with localities where these effects were observed. In some instances, where historical descriptions allowed us do so, the effects were precisely located on the geographical spots where they have been observed (mountains, rivers, etc.). Thanks to the new digital cartographic instruments, in some instances we have been able to draw rather accurate areal locations, in particular for landslides, by integrating historical, geological, territorial and toponomastic evidence. While treating locations as points, the CFTI5Med web-interface allows the user to load on the map a number of overlays from external WebGIS resources with administrative, topographic, geologic and tectonic information. In addition to the immediate access to the original sources used to identify the effects listed in the Catalogue, this feature allows an expert user to develop his/her own geologic interpretations, further bridging the gap between historical seismology data and field geology observations.