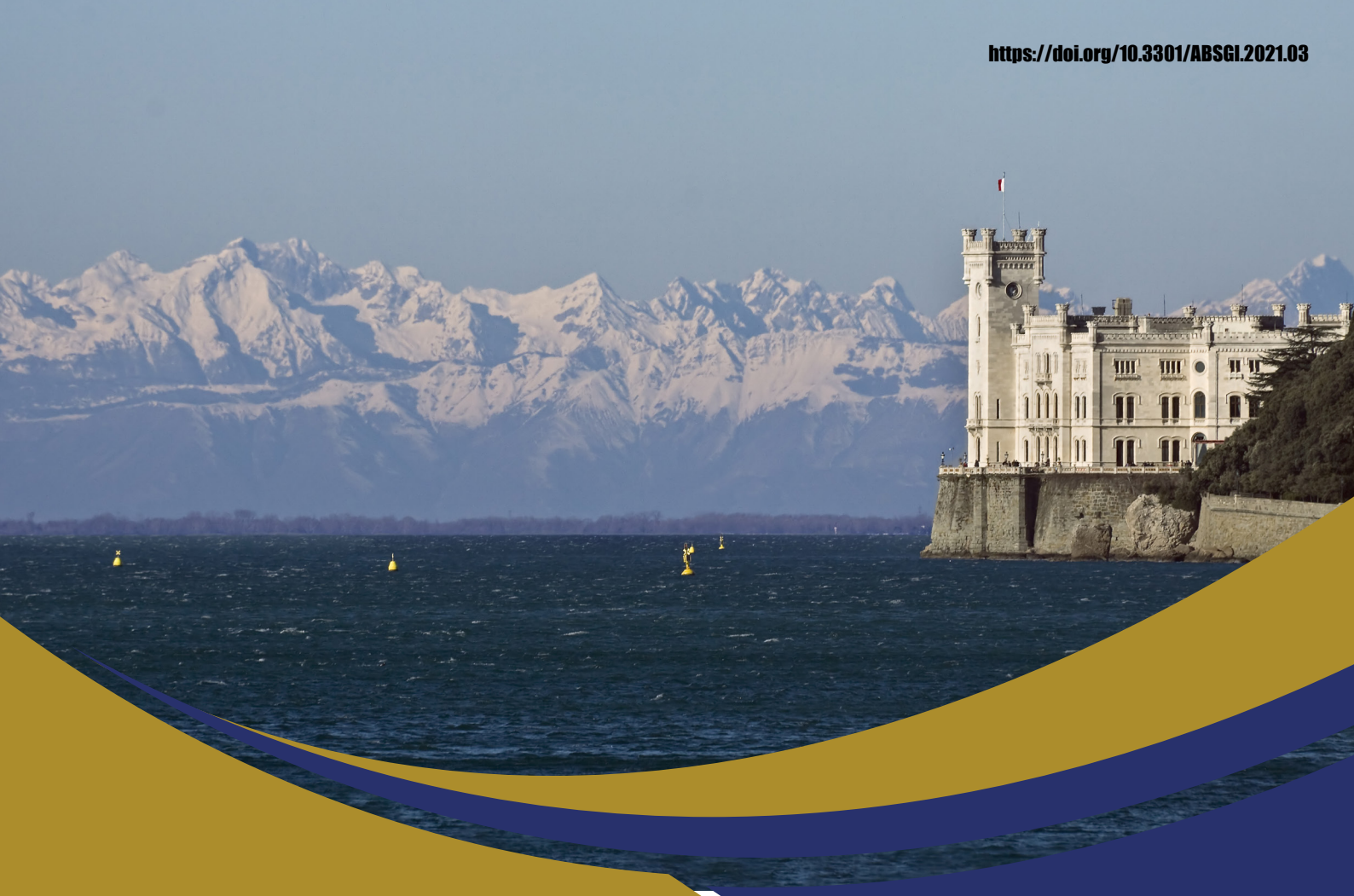
https://doi.org/10.3301/ABSGI.2021.03



Trieste 14-16 settembre 2021

ABSTRACT BOOK

a cura della Società Geologica Italiana

GEOLOGY WITHOUT BORDERS

90° Congresso della Società Geologica Italiana

dipartimento di matematica e geoscienze
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COVER IMAGE:

Miramare Castle in Trieste (Italy) with mountains in background (Photo 7915319 © Jackallxxx | Dreamstime.com).

Database of active faults in Friuli Venezia Giulia: a basic tool for seismic hazard assessment

Poli M.E.*[4], Bonini L.[1], Busetti M.[2], Piano C.[3], Marchesini A.[4], Civile D.[2], Dal Cin M.[2], Paiero G.[4], Patricelli G.[4], Ponton M.[1], Areggi G.[1], Bensi S.[3], Bertone N.[1], Del Ben A.[1], Massari G.[3], Pini G.A.[1], Rebez A.[2], Santulin M.[2], Tamaro A.[2], Zampa L.S.[2] & Zanferrari A.[4]

[1] Università di Trieste - Dipartimento di Matematica e Geoscienze. [2] Istituto Nazionale di Oceanografia e di Geofisica Sperimentale, OGS. [3] Servizio Geologico, Direzione centrale ambiente ed energia - Regione Autonoma Friuli Venezia Giulia. [4] Università di Udine - Dipartimento di Scienze Agroalimentari, Animali e Ambientali.

Corresponding author e-mail: eliana.poli@uniud.it

Keywords: active faults, geodata base, Eastern Southern Alps, Friuli.

The Friuli Venezia Giulia region (FVG) belongs to the easternmost portion of the Southern Alps, where NE-SW trending, S-SE-verging thrusts of the Southalpine Quaternary front interacts with NW-SE-striking right-lateral strike-slip fault-system that characterizes the Italian-Slovenian border area.

Both fault systems are still active as testified by historical and instrumental seismicity (e.g. Rovida et al., 2021). During the last millennium six M≥6 earthquakes struck FVG and surrounding regions causing thousands of casualties and widespread damages (1348, Alpi Giulie; 1511, Friuli-Slovenia; 1928, Carnia; 1873, Alpago; 1936, Cansiglio; 1976, Friuli).

Despite the abundance of scientific literature produced after the devastating 1976 Friuli earthquake sequence (see for a review Carulli, 2018), before this project FVG was not equipped with a systematic and homogeneous database of active or potential active faults based on the seismotectonic features.

For this reason, the Geological Service of the Friuli Venezia Giulia Region promoted a research project in collaboration with the University of Trieste, the University of Udine and the National Institute of Oceanography and Experimental Geophysics (OGS) of Trieste in order to create a database of the active faults in FVG. Input data derives from published papers, studies and maps in FVG produced during the past 50 years and based on geological, geophysical, morphotectonic, seismological, paleoseismological data. The database is organized in direct or indirect clues on the location of active or presumably active faults, as well as on their recent activity (e.g. historical, Holocene, post-LGM, pre-LGM, Quaternary and Pre-Quaternary). These clues served to fix major tectonic structures, and to create the map of the active or presumably active faults. When data are available, the structures are characterized by a full set of geometric, kinematic and seismological parameters (e.g., slip rate, recurrence interval). Each parameter is rated for accuracy (e.g. quality index).

We think that this database represents a useful tool to assess both ground shaking scenarios and surface faulting hazard.

Carulli G.B. (2018) - The development of seismotectonic studies on the Friuli Venezia Giulia region before and following the 1976 Friuli earthquake. Bollettino di Geofisica Teorica ed Applicata, 59(4), 351-372. https://doi.org/10.4430/bgta0212.

Rovida A., Locati M., Camassi R., Lolli B., Gasperini P. & Antonucci A. (2021) - Catalogo Parametrico dei Terremoti Italiani (CPTI15). versione 3.0. Istituto Nazionale di Geofisica e Vulcanologia (INGV). https://doi.org/10.13127/CPTI/CPTI15.3.