

## **Evidence for quaternary tectonic activity from the reconstruction of the buried quaternary bottom surface in the North-Eastern corner of the Friuli plain (NE Italy)**

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This study deals with the reconstruction of the buried north-easternmost sector of the Friuli plain, through the analysis of seismic and wells subsurface data. The interest was focused on the most recent stratigraphical horizon, here interpreted as the bottom of the Quaternary succession, with the aim to detect the Quaternary activity of the main faults.

The eastern Friuli-western Slovenia area is characterized by the interaction of two different deformational systems: in the western sector prevails thrust activity, in the eastern one dominates strike slip tectonics. Main fault-systems show an about E-W trending in the W-sector and a NW-SE trending in the eastern one. Both deformational systems are subjected to NNW-SSE compressional regime (Serpelloni et al, 2016), responsible of their reverse or transcurrent/transpressive kinematics. Their activity is testified by the recent and historical seismicity of the area (Mw6.63, 1348; Mw6.32, 1511; Mw6.45, 1976) (Rovida et al, 2016), but their seismogenic role is still not completely clear. In this contest, Quaternary activity has been assumed for the Susans Tricesimo thrust (Poli & Zanferrari, 2017), while recent paleoseismological investigations revealed Quaternary dislocations on the Colle Villano thrust (Falcucci et al, 2018).

In this study industrial seismic lines interpretation, together with deep well logs data, allowed to reconstruct the geometry of the main stratigraphical horizons (from the top Cretaceous-Paleogenic carbonatic platform to the Quaternary base) and the main tectonic structures of the buried eastern Friuli plain. In particular, through the implementation of well logs data it was possible to reconstruct the thickness of the buried alluvial Quaternary deposits and to identify the tectonic influence on the bottom of the Quaternary surface. By merging these new data with morphotectonic and field observations, the main buried active faults of the area were detected and possible estimates of their activity rates were performed.

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