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II EDITION: 23-25 June 2024

# CRUST Workshop

## Campus Università d'Annunzio Chieti

## TOOLS, DATA, AND MODELS FOR 3D SEISMOTECTONICS: THE ITALIAN OVER TIME LABORATORY

# 3D model of the Montello-Collalto area (eastern Southern Alps, Italy) from geological, geophysical and seismological data

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The Montello-Collalto area is located on the front of the eastern Southern Alps in the Veneto region of Italy. Geomorphological, geodetic and seismological data indicate that this area is tectonically active, even if most of the existing active faults are not visible as they are hidden under the sediments of the Venetian plain.

In the second half of the 20th century, this area was investigated both for hydrocarbon exploration and for seismic studies of the lithosphere; therefore, numerous wells were drilled and seismic profiles recorded, but only recently most of this data became freely accessible.

Since 2012, the Montello-Collalto area has been monitored by the Collalto seismic network, a local network deployed for surveillance of the Collalto underground gas storage facility. So far, no evidence of anthropogenic seismicity has been found, while the spatial pattern of recorded microseismicity revealed an unprecedented picture of the Montello thrust system (Romano et al., 2019; Peruzza et al., 2022).

Several sparse geological profiles with different structural styles have been published for this section of the Alpine chain by different authors; the most recent and coherent view has been proposed by Picotti et al. (2022), by merging data from the literature with new field and subsurface data (structural data, borehole logs, inedited seismic profiles, microseismicity) into a comprehensive structural-geological framework for the whole area.

We show the preliminary 3D structural-geological model of the study area, which was created with the software Geomodeller (Intrepid Geophysics) using all the collected data.