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1,5000 geological map of the upper Cretaceous intraplatform-basin succession in the "Gravina di Matera" canyon (Apulia Carbonate Platform, Basilicata, southern Italy)

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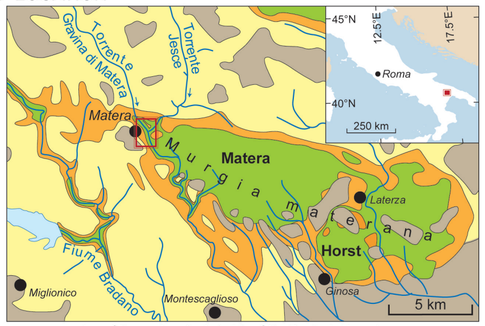
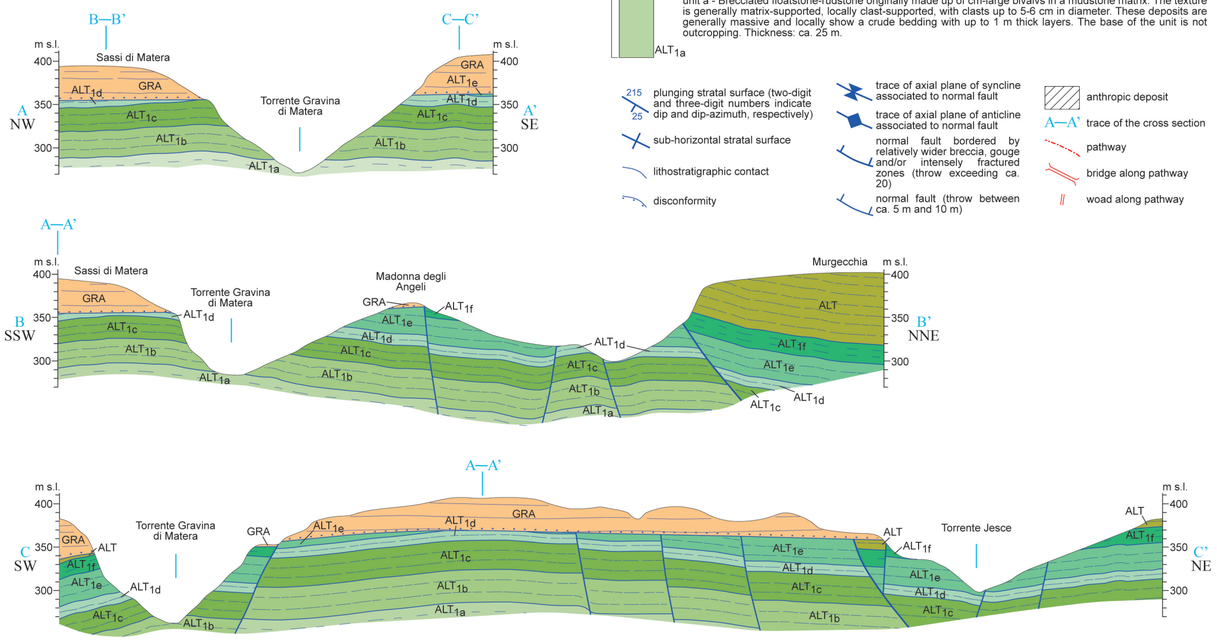
MAP LOCATION



succession of the eastern (outer) side of the Bradanic Trough
- marine and/or continental terraced deposits - early-middle Pleistocene
- Argille subappennine Fm - early Pleistocene
- Calcarenite di Gravina Fm - late Pliocene-early Pleistocene

Apulia Platform rocks cropping out in the Apulia Foreland and representing the bedrock of the outer Bradanic Trough succession
- Calcare di Altamura Fm - late Cretaceous

CROSS SECTIONS



LEGEND

QUATERNARY CONTINENTAL DEPOSITS

actual and present-day alluvial deposit
Gravels made up of carbonate rounded pebbles and boulders with silty-sandy matrix placed along the beds of the main streams. Thickness: up to 10 m. - *LATE PLEISTOCENE-HOLOCENE*
ad

talus deposit
Gravels made up of carbonate angular pebbles and boulders with silty matrix, locally placed along the steep sides of the main canyons. Thickness: up to few meters - *LATE PLEISTOCENE-HOLOCENE*
td

terraced alluvial deposits
Partly cemented gravels made up of carbonate rounded pebbles and blocks with silty matrix, placed both along the base of abandoned, hanging valleys and locally flanking the sides of the main streams. Thickness: up to few meters - *LATE PLEISTOCENE*
tad

BRADANIC TROUGH UNITS

regressive coastal and alluvial deposits
Stratified sandy-clayey, sandy, gravelly and sandy-gravelly deposits lying on the Argille subappennine Fm. locally through erosional contact; gravels are characterized by poligenic rounded pebbles. Thickness: ca. 12 m - *EARLY-MIDDLE PLEISTOCENE*
rd

Argille subappennine Formation
Burrowed silty clays and clays, locally laminated and containig macrofossils. This formation conformably lies on the Calcarenite di Gravina Fm. Thickness: ca. 25 m - *EARLY PLEISTOCENE*
ASP

Calcarenite di Gravina Formation
Litho-bioclastic calcarenites and calcrudites with grainstone/packstone texture. This formation unconformably lies through an angular unconformity on the Calcare di Altamura Fm. Thickness: ca. 50 m - *LATE PLIOCENE-EARLY PLEISTOCENE*
GRA

APULIA CARBONATE UNITS

Calcare di Altamura Formation p.p. - *SENONIAN*. The lower part of the local succession is represented by the Matera member (ALT_1), here distinguished in six units (ALT_{1a-f}), and representing an intraplatform basin succession. The upper part of the succession (unit g) shows the typical inner platform facies of the Calcare di Altamura Fm. (ALT)

unit g - Well-stratified ligth brown mudstones and very fine-grained packstone/grainstone, in the lower part, and rudists floatstone, in the upper part. The strata show a thickness in the range of 20 - 40 cm, and the bedding sufaces are often characterized by stylolites. Thickness: ca. 60 m.
ALT

unit f - Carbonate megabreccia with up to 50 cm in size re-sedimented limestone clasts. A very crude stratification is sometimes shown. Toward the top of the unit, decimeter-thick layers of carbonate breccia alternate with gently undulated layers of mudstone. Thickness: ca. 20 m.
ALT_{1f}

unit e - Well-stratified ligth greyish/whitish wackestone. The beds show an average thickness of 20-30 cm and a lobate shape; the bedding surfaces are often characterized by stylolites. Thickness: ca. 30 m.
ALT_{1e}

unit d - Well-stratified cherty limestone made up of brownish laminated marly mudstones and dolomitic limestone including dark greyish, dark brownish or whitish chert occurring as nodules or gently undulated layers. Thickness: ca. 12 m.
ALT_{1d}

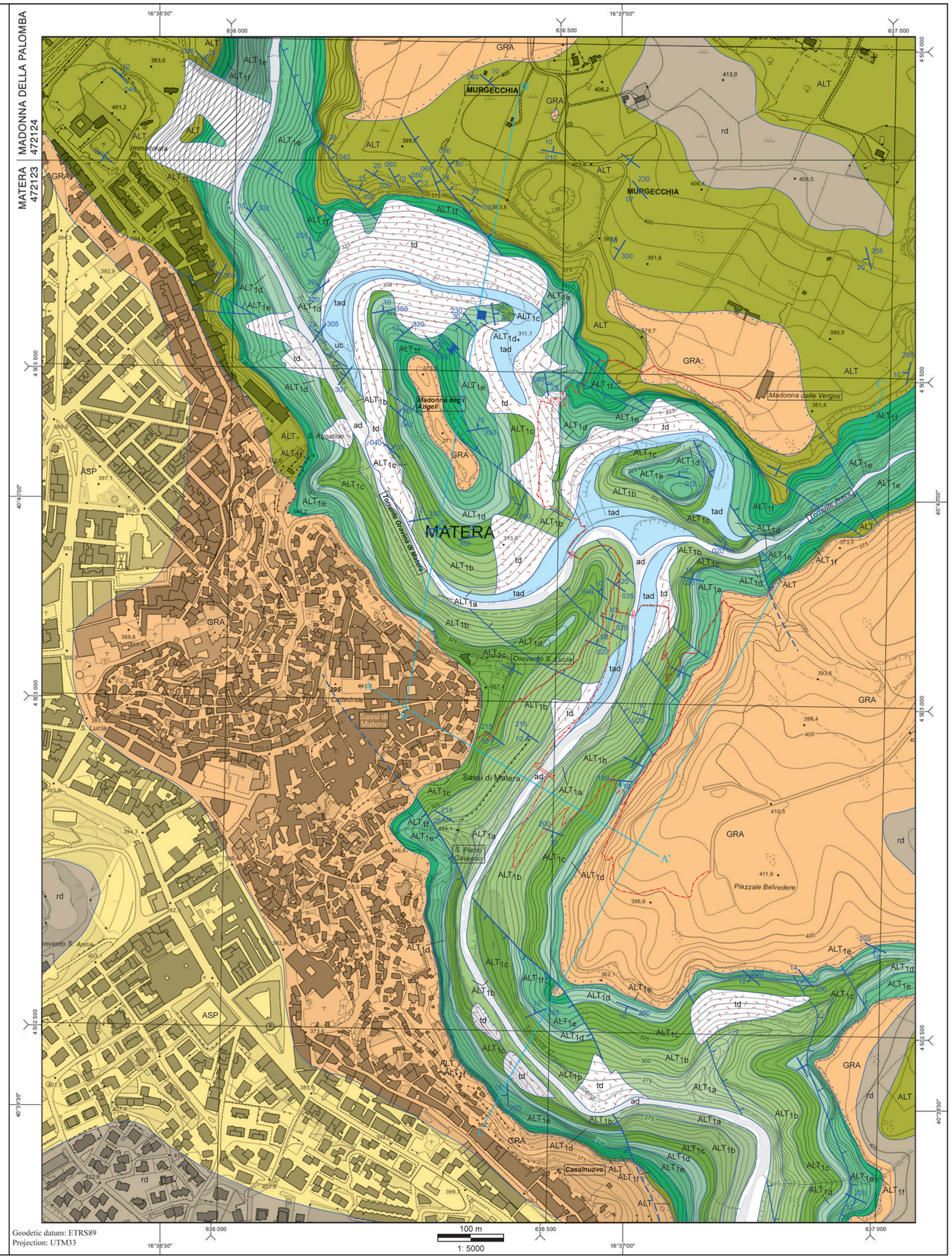
unit c - Dark grayish carious dolostone organized in up to 1 m thick crudely stratified massive beds, alternated with well-stratified dolomitic limestone occurring in centimeter to decimeter thick beds. Thickness: ca. 25 m.
ALT_{1c}

unit b - Well-stratified and finely laminated mudstone, with some set of laminae referable to stromatolites. In the lower part of the unit, layers with slump-type deformations can be locally observed packed between undeformed beds. The upper part of the unit is characterized by the alternation with up to meter-thick beds of mudstone and dolostone. Thickness: ca. 30 m.
ALT_{1b}

unit a - Brecciated floatstone-rudstone originally made up of cm-large bivalvs in a mudstone matrix. The texture is generally matrix-supported, locally clast-supported, with clasts up to 5-6 cm in diameter. These deposits are generally massive and locally show a crude bedding with up to 1 m thick layers. The base of the unit is not outcropping. Thickness: ca. 25 m.
ALT_{1a}

Matera member - ALT_1

215 / 25 plunging stratal surface (two-digit and three-digit numbers indicate dip and dip-azimuth, respectively)
sub-horizontal stratal surface
lithostratigraphic contact
disconformity
trace of axial plane of syncline associated to normal fault
trace of axial plane of anticline associated to normal fault
normal fault bordered by relatively wider breccia, gouge and/or intensely fractured zones (throw exceeding ca. 20)
normal fault (throw between ca. 5 m and 10 m)
anthropic deposit
A—A' trace of the cross section
pathway
bridge along pathway
woad along pathway



2nd folding
1st folding
3rd folding
4th folding