Geomorphological map of the Mt. Prinzera (Northern Apennines, Italy)

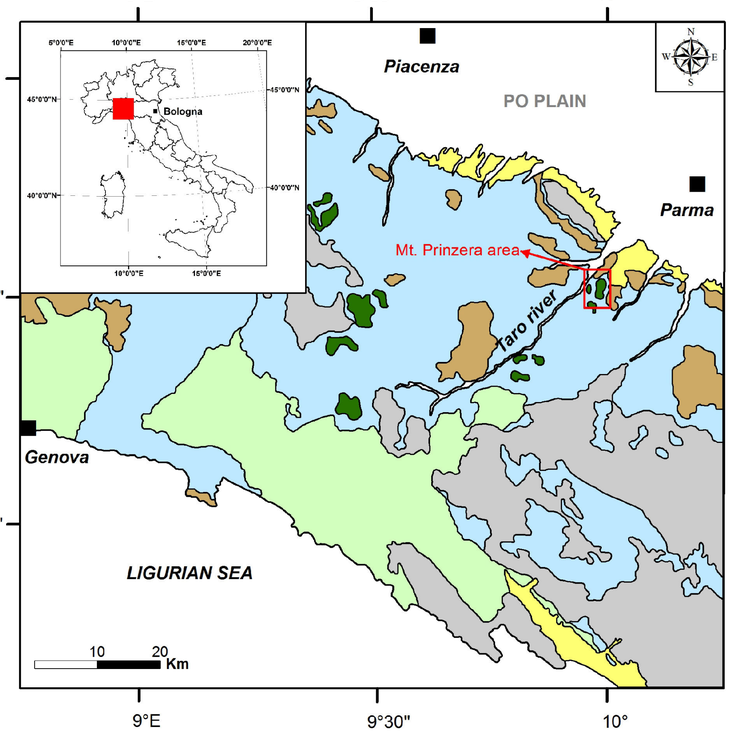
UNIVERSITÀ DEGLI STUDI DI PARMA

Alessandro Chelli*, Stefano Segadelli, Paolo Vescovi & Claudio Tellini

alessandro.chelli@unipr.it; stefanosegadelli@libero.it; p.vescovi@unipr.it; claudio.tellini@unipr.it

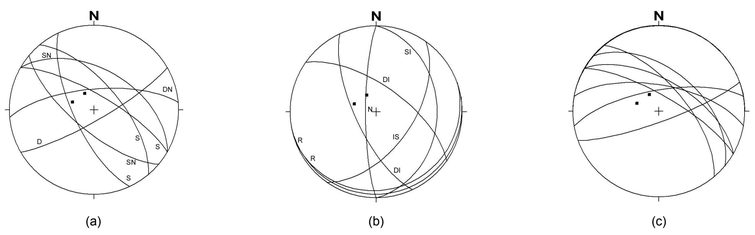
Department of Physics and Earth Sciences "M. Melloni", University of Parma, Parco Area delle Scienze 157/A, Parma - Italia

* Corresponding author



Tectonic sketch map of the Northern Apennines (modified from Marroni et. al., 2010).
Coordinate Reference System Gauss-Boaga.

Geological cross section, the trace is shown in the geomorphological map.
Legend: (1) peridotites with phacoidal foliation; (2) peridotites with sheet-like planar foliation; (3) peridotitic breccias; (4) poligenic basal breccias; (5) tectonic contact; (6) fracture; (7) fault.



Stereonets (equal area projection, lower hemisphere) show fault planes cropping out in the structural station "Abandoned quarry" (44°38'36"N; 10°04'48") where Ophiolite unit was affected by polyphasic tectonic (poles of foliation are indicated as black squares).

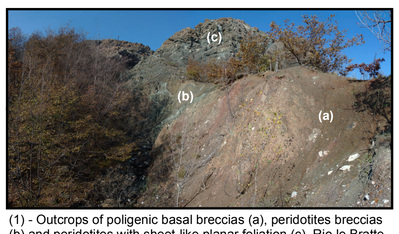
(a) Phase 1: contractional faults, Miocene in age (pre-continental Messinian deposits).
D: dextral strike-slip fault; S: sinistral strike-slip fault; DN: normal right-handed strike-slipe fault; SN: normal left-handed strike-slip fault.

(b) Phase 2: contractional faults, Middle Pleistocene in age.
R: reverse-slip fault; N: normal-slip fault; DI: reverse right-handed strike-slipe fault; SI: reverse left-handed strike-slip fault; IS: left-handed reverse-slip.

(c) Phase 3: normal-slip faults, Late Pleistocene-Holocene in age.

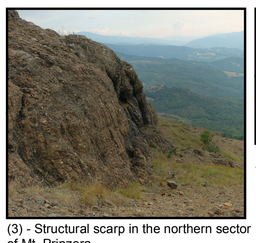
Photo gallery

The western side of Mt. Prinzera

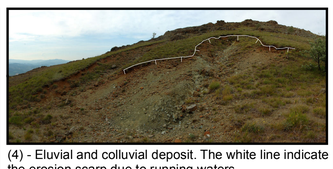


(1) - Outcrops of poligenic basal breccias (a), peridotites breccias (b) and peridotites with sheet-like planar foliation (c). Rio le Bratte, eastern side of Mt. Prinzera

(2) - Gap in the southern sector of Mt. Prinzera

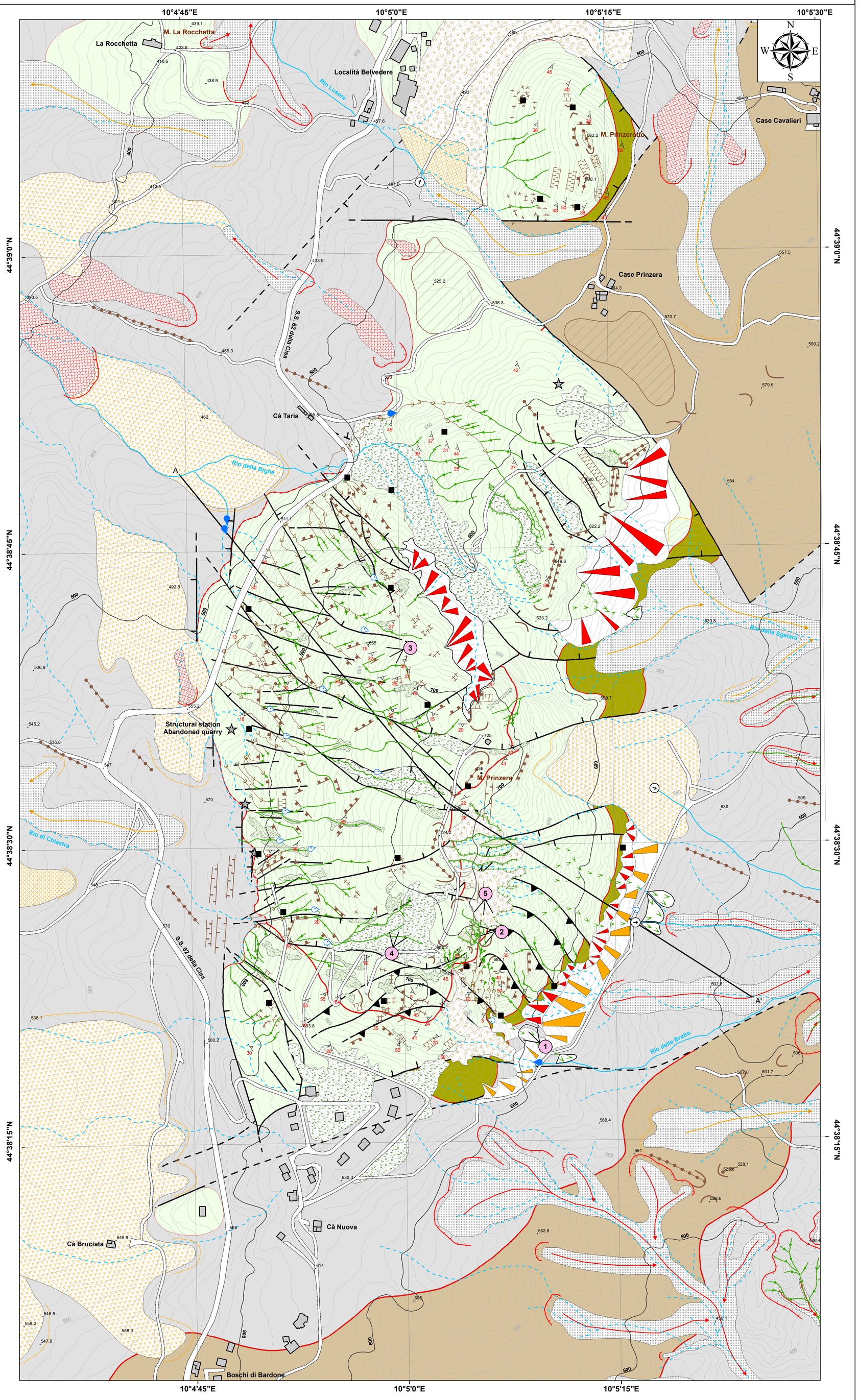


(3) - Structural scarp in the northern sector of Mt. Prinzera



(4) - Eluvial and colluvial deposit. The white line indicate the erosion scarp due to running waters

(5) - Trench along the southern side of Mt. Prinzera



Grid: Geographic Coordinate System
Projection: U.T.M., fuse 32
Datum: W.G.S. 84

0 37.5 75 150 225 300 Meters
Scale is 1:2,500

Base map data are from Regional Technical Map 1976, scale 1:5,000
Contour lines interval 5 meters

Lithological and structural data

- Peridotites with phacoidal or sheet-like planar foliation (Campanian?)
- Peridotites breccias (Campanian?)
- Poligenic breccias (Campanian) (poligenic angular rock fragments in clayey matrix)
- Helminthoid flysch (Maastrichtian-Danian)
- Foliation attitude (a) and dip values (b)
- Fault (the teeth indicate the downwards moved side)
- Thrust (the arrows indicate the overthrusted side)
- Tectonic boundary (fault with uncertain movement)
- Structural station
- Lithologic boundary
- A A' Geological cross section

Hydrography

- Perennial spring
- Seasonal spring
- Perennial watercourse
- Ephemeral watercourse

Structural landforms

- Rock surface
- Edge of scarp
- Ridge
- Open fracture
- Trench
- Gully
- Gap

Landforms, deposits and processes due to running waters

Holocene

Active — Dormant

- Rill
- Scarp
- Eluvial and colluvial deposit (a) thickness <1m (b) thickness >1m
- Debris flow

Landslides and mass movements

Holocene

Active — Dormant

- Landslide and/or degradational scarp
- Slide heap
- Flow heap
- Complex landslide heap

Active — Inactive

- Scree slope

Weathering deposits

- Residual cover (a) thickness <1m (b) thickness >1m

Anthropogenic elements

- Groundwater tapping works
- Abandoned open quarry

Topography

- Contour lines at 100m derived from D.T.M. data
- Contour lines at 5m derived from D.T.M. data
- Photography point of view (for the number see photo gallery)