

Second AEOMED Project Workshop  
**RECONSIDERING LOESS IN NORTHERN ITALY**

A field trip workshop in the Po Plain, northern Italy, 1-3 July 2013

AEOMED is an INQUA TERPRO Commission Project - <http://www.terpro.org.ar/>

**FINAL CIRCULAR and PROGRAMME**



*Faulted Loess at Monte Netto, Capriano del Colle (Brescia).*

With the support of



**INQUA**



**Università degli Studi dell'Insubria**



**Università degli Studi di Firenze**



**Radiocarbon Dating**

*Consistent Accuracy  
Delivered On-Time*

**Beta Analytic Ltd.**

**Beta Analytic Ltd.**



**Università degli Studi di Milano**



**Geological Survey of Israel**

**Organizing committee:**

Rivka Amit (Geological Survey of Israel)	rivka@gsi.gov.il
Andrea Zerboni (Università degli Studi di Milano)	andrea.zerboni@unimi.it
Franz Livio (Università degli Studi dell'Insubria – Como)	franz.livio@uninsubria.it
Stefano Carnicelli (Università degli Studi di Firenze)	stefano.carnicelli@unifi.it
Alessandro M. Michetti (Università dell'Insubria – Como)	alessandro.michetti@uninsubria.it

**The workshop background and aims**

European terrestrial records show major dust events during glacial and interglacial periods however, at present Europe does not experience such dramatic climate events, except for some dust from the Sahara. The understanding of this change in context of future climate estimations is one of the main challenges for the Quaternary scientists today. The loess in Italy in general and the loess in the Po Plain in northern Italy in particular, represents an extraordinary sedimentary record for paleoenvironmental reconstructions. Despite of many systematic studies carried out in the last decades on loess sequences located at northern, eastern and southern margin of the Po Plain, loess in Italy is somewhat overlooked in comparison to the classical sequences described in central and north Europe. As a result, crucial data are excluded from the analyses and interpretations of the loess in Europe. Moreover, the benefit of the loess in Italy is that it has a wide range of loess types e.g., glacial, non glacial and desert loess all derived from different sources, representing a bridge between the arid circum-Mediterranean regions and the central Europe loess basin. Differently from other European loess sites, Italian sites give an opportunity to study the role of each type of loess/ dust in soil formation and to better interpret paleoclimate and paleoenvironmental issues.

Thus, the aims of this workshop, which is part of the INQUA funded AEOMED Project, is to bring together loess experts to discuss the loess topic in Italy in the context of the loess issue in Europe and around Mediterranean in several key sites and to map gaps in knowledge in regard to glacial and non-glacial loess transportation and accumulation. In addition, we would like to stimulate the collaboration between scientists from countries around the Mediterranean who work on this issue and to involve students and young scientists in the study of these scientific issues, which are critical for global paleoclimatic reconstructions and understanding of terrestrial processes.

Such a field workshop in the Po Plain is a unique opportunity to discuss basic questions such as variety of loess types, sources of the different loess types, climatic deriving forces for loess transportation and deposition, loess accumulation processes, the formation of loessial soils in glacial and non glacial environments and its paleoclimate interpretations.

The workshop is organized as a field trip during which we will visit several key sites of loess sequences located at the margin of the Alps and the Apennines. This will offer a wide view on related issues as i.e. the using of these sequences as reliable records for paleoenvironment and paleoseismology of this region.

### **Study Sites at the margins of the Po Plain**

- Val Sorda (Cavaion Veronese, VR; guides: Cremaschi, Zerboni): The Val Sorda sequence is a very well preserved Upper Pleistocene stratigraphic section consisting of the succession of a till, capped with a rubified Eemian paleosol, which is overlain by a colluvial layer and by a thick loess unit, including three chernozem paleosols, formed during MIS 4 and 3; the sequence is capped and preserved by fluvioglacial and glacial deposits (MIS 2).
- Monte Netto (Capriano del Colle, BS; guides: Livio, Michetti, Zerboni): Monte Netto is an isolated hill in the middle of the northern Po Plain, whose growing is due to the amplification of a buried thrust-related anticline since Middle Pleistocene. A thick stratigraphic sedimentary sequence is exposed in a quarry on the top of the hill. This sequence is consisting of fluvioglacial sediments capped by a thick loess pack, intercalated with deeply rubified paleosols. The loess sequence is probably the thickest in northern Italy and corresponds at least to three events of aeolian sedimentation, two of which are dated, by OSL, to the Upper Pleistocene.
- Ghiardo (Cavriago, RE; guides: Cremaschi, Zerboni): At Ghiardo site, at the margin of the Apennine, there is a complex loess sequence, deposited on Pleistocene alluvial terraces and representing a long term of aeolian sedimentary phases (dust accumulation). This sequence underwent weathering processes during the climate change phases of the mid-to-late Quaternary. Moreover, the surface buried by loess and its initial phase of deposition are contemporaneous with the dwelling of Mousterian hunters, while the top part of the soil bears traces of Chalcolithic specific land management practices, which appears to have influenced the soil forming processes.
- Boschi di Carrega (Collecchio, PR; guides: Carnicelli, Costantini): The high terrace of Boschi di Carrega bears a thick loess accumulation of Late Pleistocene age, belonging to the same loess sequence of the Ghiardo plateau. Due to long-term, stable use of land as hunting grounds and to institution of the area as a park, back into the 18<sup>th</sup> century, conservation of the loess cover is better than average along the northern Apennine piedmont. Comprehensive soil data, gathered since 1967, show deep soils on aeolian materials, part of which have possibly never been ploughed. Multi-sequum soils, acidified in the top sequa, are documented.

Workshop programme:

*July the 1<sup>st</sup>, Monday:*

10.30: Opening ceremony and leaving from Como and Milano.

10.30: picking up people arriving in Milano (Central Station).

12.00: arriving at Cavaion Veronese (VR), introductory discussion during the lunch.

14.00: visit at the Val Sorda section and the Garda glacial amphitheatre.

17.00: leaving from Cavaion Veronese to Capriano del Colle (BS).

In the evening an outreach meeting with the community at the Municipality of Capriano del Colle; dinner and overnight at Capriano del Colle (Hotel Niga).

*July the 2<sup>nd</sup>, Tuesday:*

9.00: visit the Monte Netto section (a new exposure was opened for the workshop).

12.30: Lunch in Capriano del Colle.

14.30: leaving from Capriano del Colle to Cavriago (RE); visit to the Ghiardo site (a new exposure was opened for the workshop); overnight in Parma (Hotel Residence Astoria).

*July the 3<sup>rd</sup>, Wednesday:*

9.00: transfer to Collecchio (PR): visit the Boschi di Carrega site (a new exposure was opened for the workshop).

13.00: lunch in Collecchio and final discussion on future perspective on the study of loess in the Po Plain.

16.00: leaving Collecchio to Parma (Central Station), Milano (Central Station) and arriving to Como in the evening.