



Integration of micro- and nano-morphological analyses to reconstruct the depositional and post-depositional evolution of paleosols in the Norian succession of the Southern Alps (Northern Italy).

L. Trombino (1)(2), A. Anelli (1), F. Berra (1) and F. Jadoul (1)

(1) University of Milano, Earth Sciences Department, Via Mangiagalli 34 - I 20133 Milano - Italy. (2) C.N.R., Environmental Processes Dynamic Institute, Via Mangiagalli 34 - I 20133 Milano - Italy. (Luca.Trombino@unimi.it)

Carbonate platforms may record episodes of emersion with development of karstic features and paleosols. In the geological record, a good example of pedogenesis of dolomitized shallow-water carbonate facies is recorded at the top of the Dolomia Principale (Norian) in the Brenta Group (Northern Italy). The thick (up to 800 m) platform succession is capped by several episodes of emersion followed by renewed deposition of shallow-water carbonates. This evolution led to the development of a succession (few meters thick) characterized by alternations of intertidal-shallow subtidal dolostones and red paleosols and breccias. In order to understand the weathering processes of the carbonate facies, a detailed micromorphological and SEM analyses (both morphological and compositional) of the collected samples have been performed: results of this preliminary work are summarized as follow. The micropedological analyses allow to identify the occurrence of pedofeatures as clay coatings and amorphous nodules, which are congruent with the fersiallitic pedogenetic regime suggested for this kind of paleosols. The SEM microanalyses indicate the presence, within the supposed paleosols horizons, of bodies enriched in iron and the occurrence of thin clayey layers. The chemical composition of the latter indicate that they are mineralogically represented by T-O to T-O-T clay minerals, still indicating a subtropical pedogenetic paleoenvironment. The post depositional diagenetic history of the studied succession strongly affected the primary features of the paleosols: the recrystallization of the dolomitic succession led to the pervasive growth of small dolomitic crystals that over-

print (with different degree) the original pedofeatures, locally completely deleting the original structures.