



Occurrence of the Tephrostratigraphic Markers X5-X6 in the Campanian Quaternary Successions (southern Italy)

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A detailed stratigraphic and tephrostratigraphic study of several Campanian Quaternary successions has been carried out. Several tenths of meters long drilling cores and outcrops have been investigated in order to better define the stratigraphy of the Campanian Volcanic Zone (CVZ). Also a comparison with the main eruptions of CVZ during the last 120 ka has been performed.

The studied cores cover different time spans during the Last Glacial Cycle. These cores are different in age and geographic positions (Campanian Plain and Cilento Promontory) as well as in the modality and rate of the sedimentation. Given that, different volcanic events are recorded within each of them.

The studied outcrops are located along slopes bordering the Campanian Plain (Caserta): in a quarry near Durazzano (DUR), Maddaloni (MA) and Baronissi (BA). From the same area, near Sant'Angelo in Formis, three cores, around 80 m deep, have been sampled (P1, P2 and P3).

Evidence of pre-Campanian Ignimbrite (CI) tephromarkers have been collected also in several outcrops along the Cilento coastline (Marciano et al., 2007) and in a core, 60 m long, in the Vallo di Diano basin (SC1).

In detail, 35 different pyroclastic layers have been identified. At the microscopic observation 20 primary tephra have been analysed and described. Glass shards and pumices, as well as the main mineral phases, have been handpicked in order to be chemically analysed through EDS analyses.

Then, on the base of stratigraphic constrains, comparisons with the tephrostratigraphic markers have been carried out. The chemical compositions and the mineral assemblages of 12 out of 20 investigated layers have been potentially linked with the markers X5-X6, spanning the age range between 105 and 110 ka.

The evidence of CVZ widespread pre-CI eruptions is already know along the Campanian Plain (De Vivo et al., 2001; Rolandi et al. 2003; Di Vito et al., 2007) and the internal basins like Monticchio (Wulf et at., 2004)and San Gregorio Magno (Munno and Petrosino, 2007).

The present study shows how the products of explosive eruptions older than CI, in particular, those emplacing the markers X5 and X6, reached areas very far from the volcanic sources, like the Cilento promontory and Vallo di Diano basin.

As the evidence of the marker X5-X6 becomes more and more frequent, it could be thought a potentially powerful marker for correlation of cores and outcrops located in distal area, as well as CI was until now.