



Characterization and provenance of the building stones from Pompeii's archaeological site (southern Italy)

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Pompeii is one of the most famous and complex areas of archaeological investigation in the world and with a uniquely favorable state of preservation. Even if many studies have been devoted in time to many archaeological aspects of this ancient city, large-scale and detailed studies aimed at characterizing mineralogy, petrography and isotope geochemistry of the building stones are still lacking. The scope of the present research is to fill this gap, pointing to the definition of the provenance of the stony materials used for ancient constructions of the city of Pompeii and to the possible trade routes. This work is part of a large-scale survey carried out by the Deutsches Archäologisches Institut of Berlin, with the purposes of reconstructing the sources of raw materials of various archaeological sites of the Sarno Plain (e.g. Longola-Poggiomarino settlement, Nuceria, Stabiae, etc.) and consequently also the paleo-environments of this area during the Olocene (Seiler, 2006, 2008; Kastemeier and Seiler, 2007). We sampled all the litotypes with different macroscopic characteristics from various buildings according to location, age (time span VI century B.C. - I century A.D.) and utilization; the architectural buildings considered for this study are mainly represented public and religious buildings, houses and funerary monuments. As possible source areas, representative litotypes have been sampled from ancient pits and outcrops surrounding Pompeii as well. A set of 80 samples have been sampled by means of micro-drillings for mineralogical, petrographic and geochemical analyses, comprising optical microscopy, X-ray diffraction, inductively coupled plasma mass, X-ray fluorescence and C-O isotope geochemistry. Minero-petrographic and XRD studies of Pompeii rock samples have shown that at least ten different litologies occur as building stones, belonging to basaltic to tephritic lavas, pyroclasts (tuffs, scoriae, etc.) and sedimentary rocks (limestone, travertines). Preliminary results on source localities indicate a local provenance for a set of volcanic rock samples, whereas the possible source areas of the sedimentary litotypes seem to be more complex. New minero-petrographic data of samples from surrounding outcrops are presented and compared to the related Pompeii building stones.

References

- Seiler F. (2006) - Current research projects. In: Aktuelle Forschungsprojekte, Deutsches Archäologisches Institut Zentrale, 34-35.
- Seiler F. (2008) - Rekonstruktion der antiken Kulturlandschaften des Sarno-Beckens. Ein multidisziplinäres Kooperationsprojekt mit Partnern aus Naturwissenschaften und Altertumswissenschaften in Deutschland, Italien und England. In: P. G. Guzzo - M. P. Guidobaldi (Eds), Nuove ricerche archeologiche nell'area vesuviana (scavi 2003-2006). Convegno Internazionale, Roma 1-3 febbraio, 485-490.
- Kastenmeier P., Seiler F. (2007) - La ricostruzione dei paleo-paesaggi nella piana del Sarno. Quaderni Autorità di Bacino del Sarno. Studi, documentazione e ricerca, 1, 24-26.