AACP DATABASE: A POWERFUL TOOL FOR THE INVESTIGATION OF THE METAL PROVENANCE

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n the context of the archaeometallurgical research, an important goal is to investigate the metal origin of objects and, then, reconstruct trade networks. About this, the use of Lead Isotope Analysis (LIA) coupled by trace element geochemistry has widely started to be applied in archaeology.

In the last decade, within the Alpine Archaeocopper Project (AacP: http://geo.geoscienze.unipd.it/aacp/welcome) an extensive revised database of geochemical and lead isotope data for copper deposits located in Europe, North Africa, Levant and Near East was assembled(Nimis et al 2012;Artioli et al. 2016a). The majority of the data, from the literature, have been geologically and geochemically screened, and the database has been complemented by analyses of a large set of ores from the Alps and the North-Central Italy Apennines. The database encompasses more than four thousand entries which are grouped in mineral districts according to the ore geological, geochemical, and mineralogical characters.

A multi-analytical approach and, for lead isotopes, the comparison with the database proved to be a powerful tool for the identification of the copper origin of different archaeological finds. An important results on notable Copper Age objects, such as the copper axe of the Iceman mummy (Artioli et al. 2017), will be presented and discussed in the context of the data obtained on materials from coeval Italian producing sites (Artioli et al 2015; Artioli et al.2016b).

References

[1] ARTIOLI, G., ANGELINI, I., TECCHIATI, U. and PEDROTTI, A. 2015. Eneolithic copper smelting slags in the Eastern Alps: local patterns of metallurgical exploitation in the Copper Age. Journal of Archaeological Science 63, 78-8

[2] ARTIOLI, G., ANGELINI, I., NIMIS, P. and VILLA, I.M., 2016a. A lead-isotope database of copper ores from the Southeastern Alps: A tool for the investigation of prehistoric copper metallurgy. Journal of Archaeological Science 75, 27-39.

[3] ARTIOLI, G., ANGELINI, I., ADDIS, A., CANOVARO, C., CHIARANTINI, L. and BENVENUTI, M., 2016b. Ceramiche tecniche, scorie, minerali e metalli: interpretazione del processo metallurgico. In: Metalli e metallurghi della preistoria. L'insediamento eneolitico di San Carlo-Cava Solvay, Pontedera: Tagete Edizioni; 69-81.

[4] ARTIOLI, G., ANGELINI, I., KAUFMANN, G., CANOVARO, C., DAL SASSO and G., VILLA, I.M., 2017. Long-distance connections in the Copper Age: new evidence from the Alpine Iceman's copper axe .PLoS ONE 12, e0179263

[5] NIMIS, P., OMENETTO, P., GIUNTI, I., ARTIOLI, G. and ANGELINI, I., 2012. Lead isotope systematics in hydrothermal sulphide deposits from the central-eastern Southalpine (northern Italy) European Journal of Mineralogy 24, 23-37.