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Non destructive study of the pigments and the watermarks of engravings in North European Chiaroscuro

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The "CLARO" project deals with the analysis of the pigments and the watermarks of color engravings carried out in Germany, France and the Netherlands between 1508 and 1640 [1, 2]. This non-destructive archaeometric study of prints is of particular interest for those artworks still unfamiliar with this type of approach. The characterization of pigments is indeed an essential question for a better understanding of the materiality of the engravings. Although such analyses were recently published on Italian prints [3], this study for engravings produced in northern Europe is unprecedented.

The methodology consists in the complementary use of imaging and spectroscopic techniques. On the one hand, false color infrared photography [4] and reflectance hyperspectral imaging [5] allow a first evaluation of the pigments and dyes present. Furthermore, infrared reflectography (IRR) [6] highlights materials that do not reflect infrared (as is the case of carbon black). On the other hand, fiber optics reflectance spectroscopy (FORS) [7], X-ray fluorescence spectroscopy (XRF) and Raman spectroscopy [8] allow the characterization of inorganic pigments and in some cases organic dyes. Finally, the study of watermarks by transmitted light provides information about the origin of the paper support.

We will present the corpus, the methodology applied and the first results obtained on the prints in chiaroscuro. Through the material characterization, the objective is to determine the know-how and possible specificities of engravers' workshops and even artists in northern Europe. In addition to bringing new knowledge in Art History, the results obtained will also help in the localization and dating of anonymous engravings. Those informations will be discussed with the historians and curators, partners of the project, in charge of these prints.

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