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Strain mapping of metallic cultural heritage objects with synchrotron microbeams

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Diffraction mapping of metallic objects by high energy X-ray beams is a well-established method in order to spatially resolve their macroscopic and/or microscopic strain.

We present a proof of principle of radiographic strain mapping to retrieve markings in metallic objects. The strain patterns can be analyzed by Whole Powder Pattern Fitting, Rietveld refinement or even decorrelated by Principal Component Analysis of the integrated raw data to retrieve the erased hallmarks.

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