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Type: **Keynote**

Neutron versus x-ray imaging. Selected case studies at the National museums in Berlin using radiography, macro-x-ray fluorescence mapping and computed tomography

Thursday, 21 June 2018 09:00 (35 minutes)

In this presentation we emphasize the complementarity of neutron and x-ray methods in cultural heritage science on the basis of selected study cases on museum objects from different collections of the national museums in Berlin.

Information on the genesis of different easel paintings of the collection of the Gemäldegalerie (Painting Gallery), Staatliche Museen zu Berlin-Stiftung Preussischer Kulturbesitz (SMB-SPK) gained by X-ray radiography and macro x-ray fluorescence (MA-XRF) mapping are compared to imaging by neutron autoradiography. Analogously, the special performances of x-ray and neutron computed tomography are highlighted based on the non-invasive study of 3D ivory, wooden and metal objects from different archaeological and object collections, namely the Ägyptische Museum (Egyptian Museum), the Vorderasiatisches Museum (Museum of the Ancient Near East) and the Kunstgewerbemuseum (Museum of Decorative Arts) of the SMB-SPK.

References:

Osterloh et al., Neutron computed tomography for preserving charred wooden cultural objects, Annual report FRMII, TUM (2018)

Alfeld et al., Scanning macro-X-ray fluorescence analysis and Neutron Activation Auto Radiography: Complementary imaging methods for the investigation of historical paintings, Berliner Beiträge zur Archäometrie, Kunsttechnologie und Konservierungswissenschaft (BBA) 23 (2015) 9-14

di Matteo et al., Investigation of Ancient Egyptian Metallic Artefacts by Means of Micro-Computed Tomography, BBA 23 (2015) 79-84

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