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Neutron imaging - an alternative tool for the study of cultural heritage objects

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Neutron imaging is a non-destructive testing method working along similar principles as the more common X-ray imaging methods. Due to different interaction behaviour with matter it provides different and partially complementary results. Contrary to X-rays, neutrons can penetrate many metals and heavy elements relatively easy, while they show at the same time high sensitivity for some light elements such as hydrogen. This complementarity makes it a very valuable tool for investigations of metallic or metal containing cultural heritage objects.
This presentation will give an overview of the variety of cultural heritage related topics, which can be investigated using neutron imaging techniques. We will show up the method's possibilities and limitations by presenting examples of investigations carried out at the neutron imaging facilities of the Paul Scherrer Institut (PSI), Villigen (CH). These exemplary studies comprise a broad variety of topics such as the virtual unfolding of ancient Norwegian lead amulets or the study of swords from medieval time.
The presented examples should make potential users aware of the possibilities of neutron imaging methods and encourage them to get in touch with the responsible people at the large scale facilities.

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