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POS-25 - Progress on Muon Tomography for nuclear security and safeguards

Wednesday 31 May 2017 18:00 (2 minutes)

Muon Scattering Tomography (MST) is a well-established method for detecting the presence of high density/high-Z materials for a variety of applications. Canadian Nuclear Laboratories (CNL) is a leading institution in MST research and the Chalk River site is an ideal proving ground for a number of relevant applications. CNL's Cosmic Ray Inspection and Passive Tomography (CRIPT) detector is a novel muon tomography system currently being used to quantitatively demonstrate improvements to MST by integrating muon momentum information, neutron, and gamma detectors. A series of blind experiments were conducted where unknown targets were passively scanned and the data were analyzed in an unbiased way. In addition to these experiments, on-going development of new image reconstruction algorithms is underway. One such algorithm, a new method for reconstructing 3D images based solely on the absorption of muons by materials with specific applications to imaging large structures, will be presented.

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