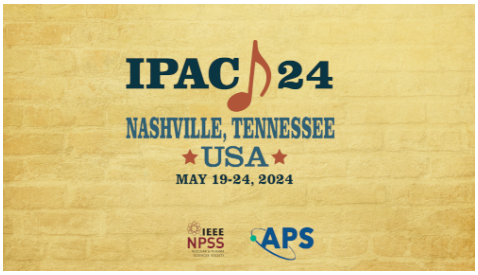

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Container stripping: enhanced classification of materials within cargo containers

Thursday, 23 May 2024 16:00 (2 hours)

For cargo and vehicle inspection, where high energy linear accelerators are used, materials within radiographic images can be classified using their atomic number (Z). The identification and classification of materials and objects within cargo containers can be difficult, due to the nature of energy spectra and their impact on the discrimination of materials. This can also be impacted by system-level factors, such as the stability of the linear accelerator and the alignment of the system. By removing the container from images of cargo, materials inside can be classified with higher confidence. When a low-Z, low density organic material is obscured by a 5 mm thick steel container, its effective-Z value changes and it can colorise as green rather than orange. This could lead to mis-classification of materials by an operator, potentially leading to the mis-identification of threatening materials. Further to the container removal, extra layers can be 'stripped'away to better reveal certain areas of interest. In future, this could be tied in with operator-assisting algorithms, as part of an enhanced image quality analysis package.

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