



Contribution ID: 276

Type: **Talk**

【704】 The PETITION Project - Initial Monte-Carlo Simulations

Tuesday, August 31, 2021 2:30 PM (15 minutes)

The PETITION (PET for InTensive care units and Innovative proton therapy) collaboration recently started to develop two Positron Emission Tomography (PET) systems to enable novel clinical applications. The first system (ICU-system) will be a mobile brain PET scanner, for the intensive care unit. The second system (PBT-system) will be employed in proton beam therapy featuring an opening for proton irradiation during image acquisition. A series of Monte-Carlo simulations have been done to obtain performance estimates. We measure a peak sensitivity of 2.66% (1.74%) for the ICU-system (PBT-system). For the spatial resolution we obtain values between 2.2mm and 2.7mm for the central region with both systems, matching well with the expectations.

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Session Classification: Biophysics, Medical Physics and Soft Matter

Track Classification: Biophysics, Medical Physics and Soft Matter