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# Measurements of stray neutron radiation with GEM detector - S. Puddu, E. Aza, R. Froeschl, S.P. George, M. Magistris, F. Murtas, M. Silari (CERN)

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Neutron production at hadrontherapy facilities is a source of non-therapeutic dose to patients. To study this dose it is necessary to measure the neutron fluence and spectra. Our proposal is to couple a GEM detector with several types of neutron converters. Using this device, we can then characterize components of the neutron spectrum and investigate the detectors reliability as a neutron dosimeter. Measurements will be taken in the synchrotron hall and the patient treatment room. We plan to vary the beam intensity to enable comparison of GEM with other detectors such as LUPIN and track detectors. The same detector coupled to a neutron converter placed in a water phantom may be able to determine the neutron contamination in the therapy field.

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