Moreover the neutron induced complications are the main concerns in Particle Therapy administration and planning, in particular in pediatric treatments [1]. We want to measure and track the ultra-fast neutrons produced in Particle Therapy treatments developing a tracking device tailored for hadrontherapy dose monitoring applications.

In a particle therapy treatment the beam interactions with patient produce many secondary particles. Monitoring methods using photons and charged particles have already been proposed, but no attempt has been made yet to use the abundant neutron component. The large penetrating power of neutrons produces nearly energy threshold free escape, providing a secondary particle sample that is higher in number with respect to photons and charged particles. Therefore, neutrons allow for a backtracking of the emission point that is not affected by multiple scattering.


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