

Abstract Submitted
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Object Tracking Vision System for Mapping the UCN τ Apparatus Volume.¹ ROWAN LUMB, TN Technological University, UCNTAU COLLABORATION — The UCN τ collaboration has an immediate goal to measure the lifetime of the free neutron to within 0.1An object-tracking stereo-vision system will be presented that precisely tracks a Hall probe and allows a mapping of the magnetic field throughout the volume of the UCN τ bottle. The stereo-vision system utilizes two cameras and open source openCV software to track an object's 3-d position in space in real time. The desired resolution is ± 1 mm resolution along each axis. The vision system is being used as part of an even larger system to map the magnetic field of the UCN τ apparatus and expose any possible systematic effects due to field cancellation or low field points which could allow neutrons to depolarize and possibly escape from the apparatus undetected.

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