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A TPC for sPHENIX at RHIC NIVEDITHA RAMASUBRAMANIAN, KLAUS DEHMELT, State Univ of NY- Stony Brook, SPHENIX COLLABORATION — The sPHENIX detector is being proposed at the Relativistic Heavy Ion Collider to measure jets and upsilons for advancing our understanding of the quark gluon plasma formed in heavy ion collisions. It is also expected to form the basis of a day-1 detector for a future U.S. Electron Ion Collider. sPHENIX is based on a superconducting solenoidal magnet formerly used by the BaBar experiment, and of charged particle tracking, electromagnetic as well as hadronic calorimetry. It covers a large acceptance, 2π in azimuth and pseudorapidities of $|\eta| < 1$, and allows to acquire data at a rate of up to 15 kHz. Furthermore, a Gas Electron Multiplier based Time Projection Chamber has been proposed to improve tracking resolution in a high multiplicity environment. In this talk we will present the current design and status of ongoing RD and simulation studies for tracking with a TPC.

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