

Tuesday,
Oct. 8th
3:45 pm



**Studying the Nuclear Equation of State
with Pions using the SpiRIT Time
Projection Chamber**

Abstract:

Bulk properties of nuclear matter are described by the nuclear Equation of State (EoS) which has been considerably constrained through various theories and experiments. The largest uncertainties lie in the high density behavior of pure neutron matter, which has applications from heavy ion collisions (HICs) of neutron rich nuclei to determining neutron star properties. Pions resulting from HICs are produced in the early high density regions of the collision and are predicted to retain some information about the symmetry energy. The SpiRIT Time Projection Chamber (TPC), was constructed to efficiently measure pions and light fragments in neutron rich HICs in an effort to constrain the EoS. In this talk, pion data obtained from Sn + Sn collisions performed at 270 MeVA will be presented, along with comparisons to current transport theories. Some details about how we overcame the various challenges involved in analyzing TPC data will also be presented.

**Cyclotron
Colloquium**

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Refreshments will be
served at 3:30 pm



TEXAS A&M
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