

# Tuesday

# Oct. 29<sup>th</sup>

# At 3:45 pm



## Toward the Omega Meson Contribution to the Muon Anomalous Magnetic Moment

### Abstract:

Quantum fluctuations induce small deviations from a charged particle's classical magnetic dipole moment, known as the anomalous magnetic moment,  $a_\mu$ . The deviation between theoretical calculation and experimental measurement of the electron  $a_\mu$  is less than 1 part per trillion, which stands as one of the great triumphs of modern physics. However, there currently exists a 3-4 standard deviation discrepancy between measurement and calculation of the muon  $a_\mu$ . Previous works have shown the omega meson to have unexpectedly large contributions to thermal photon emission rates from hadronic matter. We present ongoing work towards reducing the discrepancy in the muon  $a_\mu$  by calculating a contribution from hadronic loops containing omega mesons.

## CYCLOTRON COLLOQUIUM

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**Nathan Holt**

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**Assistant  
Professor**

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**Piedmont College**

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**Texas A&M  
University**

**CYCLOTRON  
INSTITUTE**

Room 228

Refreshments will be  
served at 3:30 pm



**TEXAS A&M**  
UNIVERSITY