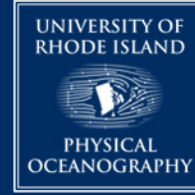
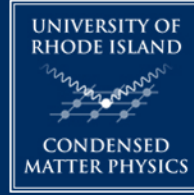
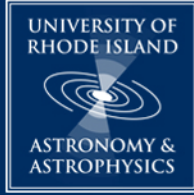
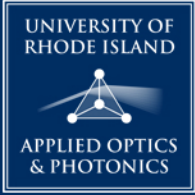


# THE UNIVERSITY OF RHODE ISLAND

## DEPARTMENT OF PHYSICS



**You are invited to join us for a talk as part of our semester colloquium series**

**Presenter:** Dr. Spencer Rogers (URI Ge Research Group)

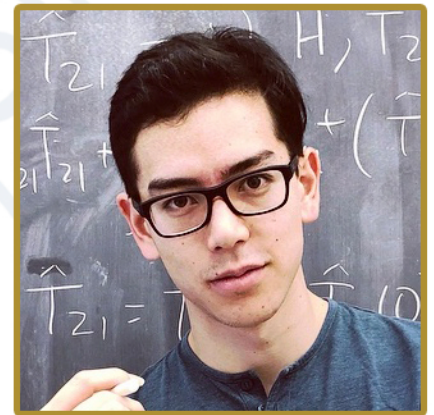
**Date & Time:** Friday March 22, 2024  
4:00 - 4:50 PM

**Location:** East Hall Room 112

**Title:** Quantifying Nonclassicality of Mixed Bosonic States

**Abstract:**

The coherent states are generally regarded as the most classical states of the quantum harmonic oscillator. Thus, a bosonic state is regarded as nonclassical if it is not a coherent state (or not a statistical mixture of coherent states). To go beyond this mere categorization, the operational resource theory (ORT) measure of nonclassicality was introduced in [W. Ge, K. Jacobs, S. Asiri, M. Foss-Feig, and M.S. Zubairy, Phys Rev. 2. 023400 (2020)], the intent being to quantify (i.e., rank) the nonclassicality of general bosonic states in terms of their usefulness for metrological tasks. However, evaluating the ORT measure for mixed states is challenging, since it involves solving a convex roof optimization problem. In this talk, I present our recent successes in evaluating the ORT measure by approximating the problem as a discrete, linear optimization problem.



SCAN THE QR CODE  
TO LEARN MORE!

CONTACT US:  
DR. WENCHAO GE  
WENCHAO.GE@URI.EDU