THE UNIVERSITY OF RHODE ISLAND
DEPARTMENT OF PHYSICS

UNIVERSITY OF RHODE ISLAND APPLIED OPTICS & PHOTONICS

UNIVERSITY OF RHODE ISLAND ASTRONOMY & ASTROPHYSICS

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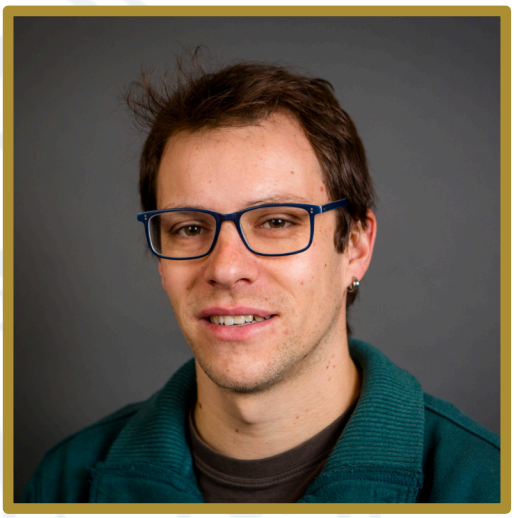
UNIVERSITY OF RHODE ISLAND CONDENSED MATTER PHYSICS

UNIVERSITY OF RHODE ISLAND PHYSICAL OCEANOGRAPHY

UNIVERSITY OF RHODE ISLAND QUANTUM INFORMATION

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



Presenter: Dr. Simone Colombo

Date & Time: Friday October 25, 2024
4:00 - 4:50 PM

Location: East Hall Room 112

Title: Observing our Universe using Quantum/Atomic Sensors

Abstract:
I will introduce the application of atomic, molecular, and optical (known as AMO) physics to quantum metrology. I will show how atoms are used as probes of our universe and how to harness quantum effects to enhance their sensing capabilities.

I will then focus on a specific type of atomic sensor, and one of my research interests is optical atomic clocks. State-of-the-art optical atomic clocks achieve mind-boggling stabilities and are almost solely limited by quantum noise. Building upon recent results (mine and from other groups), I will illustrate how optical clocks' performances can be pushed beyond current quantum noise limitations and how they can be/are deployed in the search for new physics and the testing of the fundaments of general relativity. In this framework, I will finally overview the research activities I am developing at UConn.

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