UCLA Department of Physics & Astronomy

COLLOQUIUM

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Controlling the quantum states of atoms to probe fundamental physics

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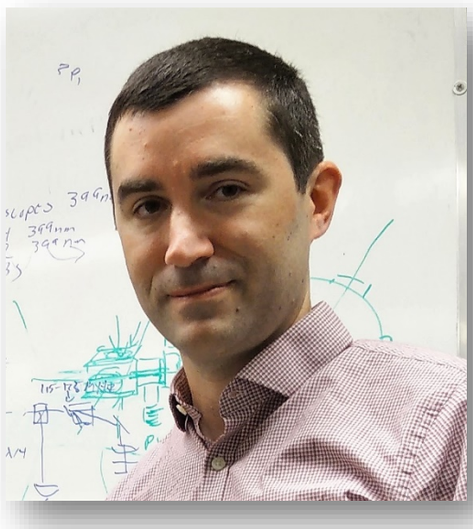

Modern techniques to control the quantum states of atoms have enabled measurements with an unprecedented precision and accuracy. This ability makes atomic systems attractive for a range of applications including quantum sensing, quantum computation, and quantum simulation. I will discuss ongoing experiments at UCLA harnessing this control of atoms to make novel gravitational, rotational, and magnetic sensors, and their application to searches for particles and fields beyond the Standard Model including sterile neutrinos, dark matter, and dark energy.