

UCLA Department of Physics & Astronomy

COLLOQUIUM

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PAB 1-434

Quantum Science with Tweezer Arrays

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Optical tweezer arrays have had a transformative impact on atomic and molecular physics over the past years, and they now form the backbone for a wide range of leading experiments in quantum computing, simulation, and metrology. Underlying this development is the simplicity of single particle control and detection inherent to the technique. I will introduce the key concepts associated with this approach and then give an overview of experimental results from our group, including quantum simulation challenging state-of-the-art classical algorithms, novel schemes for quantum computing and metrology, and an outlook towards scalability with our most recent results on trapping over 6,000 atoms.