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WEBINARS

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Quantum Sensing with Atomic Systems and Reconfigurable Instrumentation

Wednesday, July 23, 2025 1:00 PM - 2:00 PM EDT

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Presented by



Quantum sensing leverages the fundamental quantum behavior of atoms and light to measure weak signals with precision beyond that of classical methods. These measurements make use of trapped ions and cold atoms, and include applications such as magnetic field sensing, optical atomic clocks, and quantum gravimetry. Critical to these techniques are ultra-cold temperatures, coherent quantum control, and sensitive optical readout, which pose significant hardware challenges with regard to laser stabilization, timing, and noise suppression. During this presentation, find out how to generate and detect synchronized RF pulse trains, such as a Ramsey sequence, using a software-defined waveform generator and lock-in amplifier. Plus, see new ways to stabilize your systems with a laser lock box and measure clock stability with a phasemeter, using a reconfigurable suite of instruments in a single device. Finally, in a live demonstration, learn how to deploy these instruments simultaneously for maximum flexibility, and how to use Python to interface with each. Presented by [Liquid Instruments](#).



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