

New Technologies for Discovery IV: The 2018 CPAD Instrumentation
Frontier Workshop

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Quantum sensing with large 2D crystals of trapped ions

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We trap and control 2D arrays of hundreds of ions and can measure nV/m and yN scale electric fields and forces. Our technique relies on coupling the motional and spin degrees of freedom, allowing us to sensitively measure the motion of the ion crystal by reading out the spin-state of the ions.

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Session Classification: Parallel Session: Quantum Sensors

Track Classification: Quantum Sensors & Quantum Information Science