

Metrology with Qubits

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In this talk I will briefly review our work with atomic qubits in the fields of clocks [1], magnetic sensing [2-4] and interferometry [5-11], with Cs, Rb, K, Yb and NVs, for both fundamental science and quantum technology. I will then note two recent works in metrology, the first on chip-scale point-source interferometry for rotation sensing [12] and the second on clock interferometry [13]. I will mainly focus on the latter. Time permitting, I will also briefly mention a new quantum system we are working on for fundamental science and metrology, massive objects, with its unique decoherence channels [9,14-16].

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