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Abstract for an Invited Paper
for the MAR07 Meeting of
the American Physical Society

Quantum-Limited and Ultra-Precision Measurements

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I will provide a brief overview of the current state of the field of experimental quantum-limited measurements. In particular I will focus on the role of entanglement in metrology and quantum parameter estimation for achieving fundamental uncertainty limits established by quantum mechanics. In addition to summarizing the state of the art as this pertains to experimental implementations, I will conclude by discussing a current proposal to improve existing quantum metrological techniques by exploiting multi-body quantum interactions.