Title:	On Using Entangled Systems of Two Particles to Beat the Standard Quantum Limit
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Abstract:	This thesis examines the genesis of and the advances in the field of Quantum Metrology. An overview of terminologies and definitions in this emerging field is given, with a focus on Shot Noise Limit and the Standard Quantum Limit for monitoring free mass position, and the efforts to overcome them are examined. Ideas from these two subfields are then taken together and developed in a unique way, namely, in using a free system of two coupled particles to beat the SQL in monitoring mass position. Four such entangled systems are developed to introduce new degrees of freedom to share the burden of uncertainty in position in order to help them beat the SQL.
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