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Title:	Single-particle entanglement and weak value amplification
Authors:	Mohammad, Ijaz Ahamed. (/jspui/browse?type=author&value=Mohammad%2C+Ijaz+Ahamed.)
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Abstract:	This thesis is divided into two parts. The first part talks about Single-Particle Entan glement, while the rest talks about Weak Value Amplification. A state in a quantum system with at least two degrees of freedom is said to entangled when it has a particu lar non-separable form. Usually, entanglement is described in bipartite or multipartite systems. In single particle hybrid entanglement, this quantum correlation is seen in same particle but in different Hilbert spaces of spin, polarization, orbital angular momentum etc. The basics of Quantum Entanglement will be discussed together contrasting Single-Particle Entanglement with the regular entanglement. A major portion deals with the applications of Single-Particle Entanglement highlighting its resource-friendliness. The other part of this thesis is on a novel work which shows that one can achieve exponential enhancement in the post-selection probability for a fixed weak-value in Weak Value Amplification with the selection of certain entanglement generating operator.
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