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Application of Bipartite and Tripartite Entangled State Representations in Quantum Teleportation of Continuous Variables

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Abstract: We mostly investigate two schemes. One is to teleport a multi-mode W-type entangled coherent state using a peculiar bipartite entangled state as the quantum channel different from other proposals. Based on our formalism, teleporting multi-mode coherent state or squeezed state is also possible. Another is that the tripartite entangled state is used as the quantum channel of controlled teleportation of an arbitrary and unknown continuous variable in the case of three participators.

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