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Quantum Teleportation of Tripartite Arbitrary State via W State

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Abstract: A scheme of teleportation of a tripartite state via W state is suggested. The W state serves as quantum channels. Standard Bell-state measurements and Von Neumann measurements are performed. After the sender operates the measurements and informs the receiver her results, he can reconstruct the original state by the corresponding unitary transformation. The probability of the successful teleportation is also obtained.

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Key words: teleportation, entanglement, W state, unitary transformation