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SHI-HAI DONG: Entanglement measures for W-class states in noninertial frame

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We present the entanglement measures of a tetrapartite W-Class entangled system in noninertial frame, where the transformation between Minkowski and Rindler coordinates is applied. Two cases are considered. First, when one qubit has uniform acceleration whilst the other three remain stationary. Second, when two qubits have nonuniform accelerations and the others stay inertial. The 1-1 tangle, 1-3 tangle and whole entanglement measurements π_4 and Π_4 , are studied and illustrated with graphics through their dependency on the acceleration parameter rd for the first case and rc and rd for the second case. It is found that the negativities (1-1 tangle and 1-3 tangle) and π -tangle decrease when the acceleration parameter rd or in the second case rc and rd increase, remaining a nonzero entanglement in the majority of the results. This means that the system will be always entangled except for special cases. It is shown that only the 1-1 tangle for the first case, vanishes at infinite accelerations, but for the second case the 1-1 tangle disappears completely when $r > 0.472473$. It is found an analytical expression for von Neumann information entropy of the system and we notice that it increases with the acceleration parameter.

Session Classification: SHORT TALKS

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