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Negativity Fonts in Four qubit Maximally Entangled States¹ SANTOSH SHELLY SHARMA, Depto. de Física, Universidade Estadual de Londrina, Londrina 86051-990, PR Brazil, NARESH KUMAR SHARMA, Depto. de Matemática, Universidade Estadual de Londrina, Londrina 86051-990 PR, Brazil — Recently, we introduced negativity fonts as the basic units of multipartite entanglement in pure states. We show that the relation between global negativity of partial transpose of N- qubit state and linear entropy of reduced single qubit state yields an expression for global negativity in terms of determinants of negativity fonts. Transformation equations for determinants of negativity fonts under local unitaries (LU's) are used to construct N-qubit LU invariant and N-tangle (an entanglement monotone). The difference of squared negativity and N-tangle is an N qubit invariant which contains information on entanglement of the state caused by quantum coherences that are not annihilated by removing a single qubit. Entanglement monotones that detect the entanglement of specific parts of a four qubit state are also constructed. It is shown that these entanglement monotones bring out distinct features of several states which have been proposed to be the maximally entangled four qubit states.

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