

Application of Bipartite Entangled States to Quantum Mechanical Version of Complex Wavelet Transforms

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Abstract: We introduce the bipartite entangled states to present a quantum mechanical version of complex wavelet transform. Using the technique of integral within an ordered product of operators we show that the complex wavelet transform can be studied in terms of various quantum state vectors in two-mode Fock space. In this way the criterion for mother wavelet can be examined quantum-mechanically and therefore more deeply.

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