



MODIFIED HERMITE FUNCTIONS FOR DESIGNING NEW OPTIMAL UWB PULSE-SHAPERS (WedAmOR7)

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✳ **Abstract :** In this paper, we propose a new technique to design time-limited pulse shapes for ultra wideband (UWB) communication systems. The technique is based on searching the optimal pulse on a sub-field spanned by set of orthogonal functions built from the modified Hermite function. The design problem can be formulated as a linearly constrained convex problem. Simulations results, show that the pulses designed using the proposed technique, conform to the spectral emission constraints. More over, it out preforms other pulses design with other approaches, in terms of normalized efficient signal power.