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8. Analysis

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Wavelets in Closed Forms

Almost all the known orthonormal wavelets, except for the Haar and Shannon wavelets, can not be expressed in closed forms. By a closed-form expression we mean a representation in terms of elementary functions, such as trigonometric, exponentil or rational functions, or in terms of special functions of mathematical physics, such as gamma, Bessel, or hypergeometric functions. In this talk we outline a procedure for obtaining orthonormal wavelets bases and non-orthonormal but interpolating wavelets. we then apply it to specific cases and obtain many examples of wavelets in closed-form expressions.