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On the Finite Hankel Transform Eigenfunctions

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Abstract

The eigenfunctions of the finite Hankel transform, also known as generalized or circular scattering and image reconstruction. They also serve as optimal apodization functions, that provide high dynamic range detection.

New efficient, robust and accurate numerical technique for evaluation of the finite Hankel transform eigenfunctions, as well as various integrals containing this functions (e.g. the associated eigenvalues) is presented.