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Recent results on the finite Hilbert transform

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We present recent results obtained, together with Susumu Okada and Werner J. Ricker, on the study of the finite Hilbert transform. This operator is defined, for $f \in L^1(-1,1)$, by

$$T(f)(x) = \lim_{\varepsilon \to 0^+} \frac{1}{\pi} \left(\int_{-1}^{x-\varepsilon} + \int_{x+\varepsilon}^{1} \right) \frac{f(y)}{y-x}\, dy, \quad x \in (-1,1).$$

References

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