(Min,+) Wavelets for Non-Linear Analysis

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For all function $f : \mathbb{R}^n \to \overline{\overline{\mathbb{R}}}$ one introduces $(\min, +)$-wavelets which are lower and upper hulls build from $(\min, +)$ analysis [1, 2]. One shows at theoretical level and on numerical applications for the Weierstrass functions, that $(\min, +)$-wavelets decomposition opens a non-linear branch to the multi-resolution analysis of a signal, in particular for the Hölder exponents calculation and Empirical Mode Decomposition (EMD).

References

[1] M. Gondran, *Analyse minplus*, C. R. Acad. Sci. Paris **323** (323) 371-375, 1996.

[2] M. Gondran, *Convergences de fonctions valeurs dans R^k et analyse minplus complexe*, C. R. Acad. Sci. Paris **329** 783-788, 1999.