

Multifractal analysis of the divergence of wavelet series

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In this talk, we study pointwise divergence properties of wavelet expansions of functions in a given Besov space. We obtain deterministic upper bounds for the Hausdorff dimensions of the sets of points where a given rate of divergence is observed, and we show that these bounds are generically (in the sense of Baire's categories) optimal. This gives a complement to the works done by F. Bayart and Y. Heurteaux (cf. [2]) in the case of Fourier series and by J.M. Aubry (cf. [1]).

References

- [1] J.M. AUBRY, On the rate of pointwise divergence of Fourier and wavelet series in L^p , *J. Approx. Theory* **538** (2006), 97–111.
- [2] F. BAYART AND Y. HEURTEAUX, Multifractal analysis of the divergence of Fourier series, *Ann. Sci. Ec. Norm. Supér.* **45** (2012), 927–946.

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