

MR1321422 (96a:42046) [42C15](#) [41A58](#) [47A75](#)

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★**The spectral theory of multiresolution operators and applications. (English summary)**

Wavelets: theory, algorithms, and applications (Taormina, 1993), 13–31, *Wavelet Anal. Appl.*, 5, Academic Press, San Diego, CA, 1994.

The paper surveys some recent results about multiresolution analyses with integer dilation factors (not necessarily 2). The results discussed are related to the following questions: under what extra conditions the wavelet tight frame becomes an orthonormal basis; what are the smoothness properties of the scaling function (and of the corresponding wavelets).

The answers are given in terms of spectral properties of multiresolution operators. The authors use the scale of classical Sobolev spaces to measure the smoothness of functions.

{For the collection containing this paper see [MR1321420](#)}

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