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Spaces of functions of mixed smoothness from the decomposition point of view. (English. Russian original) [Zbl 0707.46025](#)

Proc. Steklov Inst. Math. 187, 163-184 (1990); translation from *Tr. Mat. Inst. Steklova* 187, 143-161 (1989).

This survey deals with the spaces $S_p^r L$ and $S_{p,\theta}^\alpha B$ of Sobolev and Besov type, respectively, having dominating mixed smoothness properties. The authors describe decomposition procedures, characterizations via approximation and Fourier-analytical methods of Paley-Littlewood type. Finally the peiodic case is considered.

Reviewer: [H.Triebel](#)

MSC:

[46E35](#) Sobolev spaces and other spaces of “smooth” functions, embedding theorems, trace theorems

Cited in **5** Documents

[46E30](#) Spaces of measurable functions (L^p -spaces, Orlicz spaces, Köthe function spaces, Lorentz spaces, rearrangement invariant spaces, ideal spaces, etc.)

Keywords:

spaces with dominating mixed smoothness properties; decomposition procedures; characterizations via approximation and Fourier-analytical methods of Paley-Littlewood type; peiodic case