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THE n-DIMENSIONAL CONTINUOUS WAVELET TRANSFORMATION ON GELFAND AND SHILOV TYPE SPACES

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Abstract. In this paper the wavelet transformation on Gelfand and Shilov spaces of type $W_M(\square^n)$, $W^\Omega(\Delta^n)$ and $W_M^\Omega(\Delta^n)$ is studied. It is shown that $W_\psi\phi : W_M(\square^n) \to W_M(\square^n \times \square_+^n)$, $W_\psi\phi : W^\Omega(\Delta^n) \to W^\Omega(\Delta^n \times \square_+^n)$ and $W_\psi\phi : W_M^\Omega(\Delta^n) \to W_M^\Omega(\Delta^n \times \square_+^n)$ is linear and continuous where $\square^n$ and Δ^n are n-dimensional real numbers and complex numbers. A boundedness result in a generalized Sobolev space is derived.

Full text

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