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ON FOURIER COEFFICIENTS AND FACTORABLE OPERATORS

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Abstract. In this paper we combine the new interpolation method with the well-known results of convolution operator and we give a good estimate for the Fourier coefficients of a periodic fuctions f belonging to $L_\Phi(2\pi), L_{\Phi q}(2\pi)$, $W^q_\Phi(2\pi)$ and $B^s_{\Phi q}(2\pi)$. Further,we show that the Fourier coefficients belong to some Lorentz-Orlicz space $l_{\Psi,q}$.

It is one of the aims of this paper to give a discription of the Fourier coefficients with some applications in the convolution operators,we refer to the books written by A.Pietsch [15] and H.König [10]. Also, we give estimates of entropy numbers of diagonal operators acting between Lorentz-Orlicz spaces which is a consequence of the paper by B.Carl [2]. Applying these results to foctorable operators acting between arbitrary Banach spaces, we get information about the distribution of eigenvalues.

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