Electronic Journal: Southwest Journal of Pure and Applied Mathematics
Internet: http://rattler.cameron.edu/swjpam.html
ISSN 1083-0464
Issue 1, July 1, 2002 , pp. 71–80.
Submitted: January 15, 2002. Published: July 1, 2002.

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.

1991 A.M.S. (MOS) Subject Classification Codes. 46,47.

Key Words and Phrases. Convolution operator, Fourier coefficients, Banach space, Hausdorff-Young inequality, Besov spaces.

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