FOURIER COSINE–LAPLACE GENERALIZED
CONVOLUTION INEQUALITIES AND APPLICATIONS

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Abstract. We introduce several weighted \( L_p(\mathbb{R}^+)_p \)-norm inequalities and integral transform related to the generalized convolution with a weight function for the Fourier cosine and Laplace transforms. Some applications of these inequalities to estimate the solutions of some partial differential equations are considered. We also obtained solutions of a class of the Toeplitz plus Hankel integro-differential equations in closed form.


Keywords and phrases: Laplace transform, Fourier cosine transform, convolution, convolution inequality, integro-differential equation.

REFERENCES