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Jordan–Dirichlet Theorem for Functional Differential Operator with Involution

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In this paper the problem of decomposability of a function $f(x)$ into Fourier series with respect to the system of eigenfunctions of a functional-differential operator with involution $Ly = y'(1-x) + \alpha y'(x) + p_1(x)y(x) + p_2(x)y(1-x)$, $y(0) = \gamma y(1)$ is investigated. Based on the study of the resolvent of the operator easier and using the method of contour integration of the resolvent, we obtain the sufficient conditions for the convergence of the Fourier series for a function $f(x)$ (analogue of the Jordan–Dirichlet's theorem).

Key words: functional-differential operator, involution, equiconvergence, Fourier series.

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