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On a Boundary-Value Problem for One Class of Differential Equations of the Fourth Order with Operator Coefficients

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The boundary-value problem on semi-axis for one class operator-differential equations of the fourth order, the main part of which has the multiple characteristic is investigated in this paper in Sobolev type weighted space. Correctness and unique solvability of the boundary-value problem is proved, and the solvability conditions are expressed in terms of the operator coefficients of the equation. Estimations of the norms of the operators of intermediate derivatives, closely connected with the solvability conditions, have been carried out. The connection between the exponent of the weight and the lower border of the spectrum of the main operator, participating in the equation, is determined in the results of the paper.

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