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The Method of Lower and Upper Solutions for Some Fourth-Order Equations

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Abstract: In this paper, by combining a new maximum principle of fourth-order equations with the theory of eigenline problems, we develop a monotone method in the presence of lower and upper solutions for some fourth-order ordinary differential equation boundary value problem. Our results indicate there is a relation between the existence of solutions of nonlinear fourth-order equation and the first eigenline of linear fourth-order equation.



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