

**Disconjugacy of the Fourth Order Ordinary Differential Equations
and Boundary Value Problems**

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We consider the comparison type theorems which contain the necessary and sufficient conditions of disconjugacy of 4th order linear ordinary differential equations

$$u^{(4)} = p(t)u$$

when the coefficient p is the constant sign function and in some sense unimprovable conditions of disconjugacy when p is not necessarily constant sign function. On the basis of mentioned results and connections under linear integral operators with totally positive kernels, disconjugacy and solvability of general boundary problems for linear higher order equations we establish the results of solvability of 4th order linear and nonlinear ordinary differential equations under some two point boundary value conditions.