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Optimal control of nonlinear economic growth model. (Chinese. English summary)  

Summary: The optimal control problem of nonlinear economic growth model with boundary condition of neutral production function is studied. The existence and uniqueness of the solution are obtained by using the fixed point principle of Banach space, the continuous dependence of the system solution on the control sequence is obtained by using the Gronwall inequality. By means of normal cone and adjoint system, the necessary condition for the existence of the optimal solution of the optimal control problem is obtained.  

MSC:  
49J21 Existence theories for optimal control problems involving relations other than differential equations  
49K21 Optimality conditions for problems involving relations other than differential equations  
91B62 Economic growth models  

Keywords:  
economic growth model; optimal control; fixed point theorem; normal cone; adjoint system