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Summary: The article investigates a modified model of economic growth – the “Rost” model. The growth dynamics is described by a nonlinear ordinary differential equation. The problem contains the parameter $\gamma \in (0, 1)$. The case $\gamma = 1/2$ has been studied previously. The problem is solved by the Pontryagin maximum principle and by an alternative approach based on a special representation of the optimal functional and analysis of the functional-independent attainability set. The efficiency of various numerical methods to find the singular regime is analyzed.

MSC:
91B62 Economic growth models
34C60 Qualitative investigation and simulation of ordinary differential equation models
49N90 Applications of optimal control and differential games
49J15 Existence theories for optimal control problems involving ordinary differential equations

Keywords:
optimal control; Pontryagin maximum principle; singular regimes; mathematical models of economic growth

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References:

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