عنوان مقاله:

A novel geometric-based solution approach for optimal control problems

محل انتشار:

تعداد صفحات اصل مقاله: 4

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خلاصه مقاله:

This paper presents a new approach to achieve the exact solution to the optimal control problems. A reformulation of the optimal control model is developed and converted to a reduced system with fewer variables based on the differential and Poisson geometry concepts. Considering the wide use of Lagrangians in solving the optimal control models, we also theorize how the reduced Lagrangian system can be achieved using the mutual relationship between the Lagrangian and Hamiltonian forms. The proposed methodology can be effectively applied to the optimal control models in various decision making problems such as those encountered in supply chain management and optimization wherein only anapproximation of the optimal solution can be found.

کلمات کلیدی:

Optimal control problem; Poisson geometry; Hamiltonian system; Lagrangian system

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