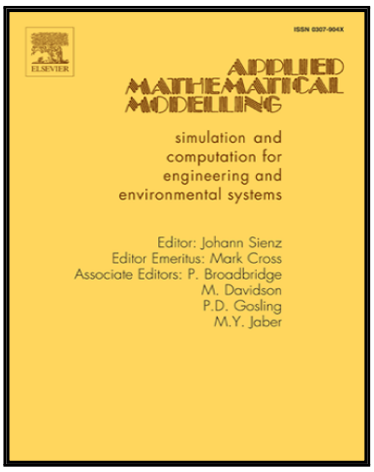


# A sequential computational approach to optimal control problems for differential-algebraic systems based on efficient implicit Runge-Kutta integration

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**Highlights**

- Efficient Runge-Kutta integrator with tangential prediction for index-1 DAE
- Control parameterized piecewise-constantly with tunable switching time instants
- Optimal control solution with an integration accuracy guarantee
- Sequential method implemented by embedding this integrator in Ipopt
- Numerical experiments for the optimal control of a Delta robot