

Resource Summary Report

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CPODES numerical integrator

RRID:SCR_000766

Type: Tool

Proper Citation

CPODES numerical integrator (RRID:SCR_000766)

Resource Information

URL: <https://simtk.org/home/cpodes>

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Description: CPODES is a numerical integrator for solving multibody dynamics problems using coordinate projection. It is based on the CVODES integrator which is part of the DOE Sundials suite. It is a multistep integrator providing variable order Adams (up to 12th order) and BDF (up to 5th order) methods for non-stiff problems and BDF (up to 5th order) for stiff problems. It uses CVODES to advance the ODE, and then performs coordinate projection back to the constraint manifold to exactly solve the DAE. The projection is also incorporated back into the error test where it permits larger steps. Binaries of this software are bundled with other SimTK Core modules.

Abbreviations: CPODES

Resource Type: software resource, source code

Keywords: dynamic, numerical integrator, multibody, source code

Availability: Free, Available for download, Freely available

Resource Name: CPODES numerical integrator

Resource ID: SCR_000766

Alternate IDs: nif-0000-23329

Record Creation Time: 20220129T080203+0000

Record Last Update: 20260821T193623+0000

Ratings and Alerts

No rating or validation information has been found for CPODES numerical integrator.

No alerts have been found for CPODES numerical integrator.

Data and Source Information

Source: [SciCrunch Registry](#)

Usage and Citation Metrics

We found 6 mentions in open access literature.

Listed below are recent publications. The full list is available at [NIF](#) .

Bocci F, et al. (2018) A mechanism-based computational model to capture the interconnections among epithelial-mesenchymal transition, cancer stem cells and Notch-Jagged signaling. *Oncotarget*, 9(52), 29906.

Tikidji-Hamburyan RA, et al. (2016) Novel Models of Visual Topographic Map Alignment in the Superior Colliculus. *PLoS computational biology*, 12(12), e1005315.

Gomez V, et al. (2015) Charging a capacitor from an external fluctuating potential using a single conical nanopore. *Scientific reports*, 5, 9501.

Sobolev A, et al. (2014) Data management routines for reproducible research using the G-Node Python Client library. *Frontiers in neuroinformatics*, 8, 15.

Bosl W, et al. (2013) Scalable decision support at the point of care: a substitutable electronic health record app for monitoring medication adherence. *Interactive journal of medical research*, 2(2), e13.

Yanashima R, et al. (2009) Network Features and Pathway Analyses of a Signal Transduction Cascade. *Frontiers in neuroinformatics*, 3, 13.