

**M. Arnold, A. Fuchs, C. Führer**

Efficient corrector iteration for DAE time integration in multibody dynamics. - *Comp. Meth. Appl. Mech. Eng.* - 195:6958–6973. - 2006.

**Abstract.** Efficient time integration is a key issue in computational multibody dynamics. Implicit time integration methods for stiff systems and constrained systems require the solution of a system of nonlinear equations in each time step. The nonlinear equations are solved iteratively by Newton type methods that are tailored to the structure of the equations of motion in multibody dynamics. In the present paper we discuss classical and recent methods for reducing the numerical effort in the application to multibody systems that are modelled in joint coordinates. The methods have been implemented in an industrial multibody system simulation package. Results of numerical tests for two benchmark problems from vehicle dynamics are presented.

**Contact:** martin.arnold@mathematik.uni-halle.de, claus.fuhrer@na.lu.se