

W. Kortüm, W.O. Schiehlen, M. Arnold

Software tools - from multibody system analysis to vehicle system dynamics. - In: H. Aref, J.W. Phillips eds.: Mechanics for a New Millenium. - Kluwer Academic Publishers, Dordrecht, 2001, pp. 225–238.

Abstract. After successful application to spacecrafts and appropriate theoretical examinations, multibody system (MBS) approaches, their formalisms and software became of interest to the vehicle system dynamicists both for rail and road vehicles.

This introductory paper sketches a few important milestones in the MBS general development related to vehicle system dynamics. While at the beginning the absence of system specific force laws was the major stumbling block, later on the numerical methods and the efficiency of the formalisms became of prime focus. In the recent past, the transition from system analysis to system design and optimization as well as the integration into multidisciplinary computer aided engineering (CAE) of vehicle systems was and still is a challenge.

Contact: martin.arnold@mathematik.uni-halle.de