PREPRINT 94-4

11 pages

ROSWITHA MÄRZ: Numerical stability criteria for differential-algebraic systems

Abstract: In this paper we transfer classical results concerning Lyapunov stability of stationary solutions x_* to the classes of DAEs being most interesting for circuit simulation, thereby keeping smoothness as low as possible. We formulate all criteria in terms of the original equation. Those simple matrix criteria for checking regularity, Lyapunov stability etc. are easily realized numerically.