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Abstract. Linear multistep methods from ODE theory may be applied straightforwardly to index-2 DAEs in Hessenberg form if they are strictly stable at infinity (Theorem VII.3.6 in E. Hairer, G. Wanner: *Solving Ordinary Differential Equations. II. Stiff and Differential-Algebraic Problems, 2nd ed.* . - Springer, 1996.). This condition is very restrictive and excludes e. g. all higher order Adams methods. In the paper we present an alternative way to apply implicit linear multistep methods to index-2 systems. The convergence of these *partitioned linear multistep methods* is guaranteed whenever the underlying ODE method is convergent with order $p \geq 3$. We discuss the new approach in detail for the application to model equations of constrained mechanical systems. The theoretical results are illustrated by a numerical comparison of multistep methods for index-2 DAEs in Hessenberg form.

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