

Line Integral formulation of Energy and QUadratic Invariants Preserving methods for Hamiltonian systems

L. Brugnano, G. Frasca Caccia, F. Iavernaro

Abstract

Recently, the family of methods named *Energy and QUadratic Invariants Preserving (EQUIP)* methods for Hamiltonian problems has been devised [1,2], able to conserve both energy and quadratic invariants for canonical Hamiltonian problems. Though their theoretical analysis is rather complete, their efficient implementation is still lacking. In order to improve on this point, in this talk we recast the methods within the framework of *Discrete Line Integral Methods*, which constitutes a recent approach to devise energy-conserving methods for Hamiltonian systems [3,4,5] and, more in general, to cope with the numerical solution of conservative problems [6,7].

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