

REVIEW OF APM-D-18-02038R1

GENERAL COMMENT

The authors have rewritten the paper taking account of the most important remarks. The section about the numerics is precise, well presented and very interesting. The paper is satisfactory in the present form.

Apart of some minor comments which I leave to the authors to account for, I recommend the present paper for publication.

MINOR REMARKS

- page 6. After the sentence: *This theorem states that, for smooth functions, higher order partial derivative commute.*, remove all detailed equations. This statement is enough as it corresponds to define the jet bundle over the displacements.
- page 22: I have the same remarks as for the first part. : It is written: *The symplectic Störmer-Verlet time integrator is employed, so that when no solicitation is applied to the system, the Hamiltonian is preserved.* In theory the symplectic scheme should preserve the symplectic structure not the Hamiltonian which is expected not to be conserved by to oscillate around a mean value ? Furthermore how do you apply the scheme to a model which is defined with respect to a skew-symmetric matrix which is not in canonical coordinates ?