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Partitioned averaged vector field methods

Wenjun Cai, Haochen Li, Yushun Wang

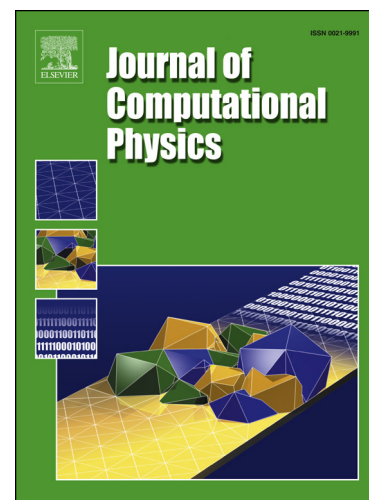
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Highlights

- We propose a PAVF method to improve the computational efficiency of the conventional AVF method.
- We provide a general partition strategy to construct the PAVF method.
- The constructed PAVF method is semi-linear or linearly implicit even for nonlinear problems.
- High-order schemes can be obtained by the composition or plus in conjunction of the adjoint method.
- Concrete numerical schemes are constructed for two Hamiltonian systems, including ODE and PDE cases.

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