

## Multisymplectic Structure-Preserving in Simple Finite Element Method in High Dimensional Case

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**Abstract:** In this paper, we study a finite element scheme of some semi-linear elliptic boundary value problems in high-dimensional space. With uniform mesh, we find that, the numerical scheme derived from finite element method can keep a preserved multisymplectic structure.

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Key words: finite element method, multisymplectic, uniform mesh, subdivision

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