

# Accepted Manuscript

Bracket formulations and energy- and helicity-preserving numerical methods for incompressible two-phase flows

Yukihito Suzuki

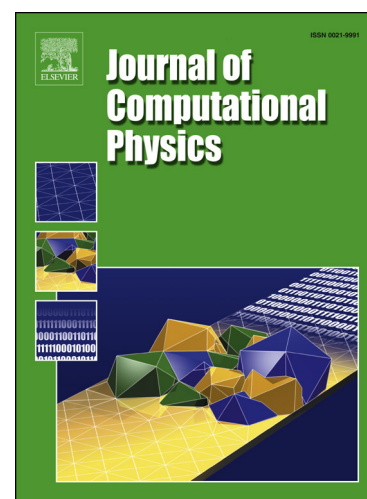
PII: S0021-9991(17)30872-0  
DOI: <https://doi.org/10.1016/j.jcp.2017.11.034>  
Reference: YJCPH 7733

To appear in: *Journal of Computational Physics*

Received date: 14 February 2017  
Revised date: 15 November 2017  
Accepted date: 25 November 2017

Please cite this article in press as: Y. Suzuki, Bracket formulations and energy- and helicity-preserving numerical methods for incompressible two-phase flows, *J. Comput. Phys.* (2017), <https://doi.org/10.1016/j.jcp.2017.11.034>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



## Highlights

- The Navier–Stokes/Cahn–Hilliard and Navier–Stokes/Allen–Cahn equations for incompressible two-phase flows are formulated in a bracket formalism.
- A structure preserving numerical method for these diffuse interface models is developed.
- The method is robust and retains the conservation properties even in computations with coarse mesh compared with the thickness of the interfacial region.
- The method inherits the structure from which budgets of the kinetic energy, helicity, and enstrophy are derived.
- The method also inherits the relation between the stream function, velocity, and vorticity.

Download English Version:

<https://daneshyari.com/en/article/6929147>

Download Persian Version:

<https://daneshyari.com/article/6929147>

[Daneshyari.com](https://daneshyari.com)