

Application of Convex Splitting Runge–Kutta method to the phase-field crystal equation

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ABSTRACT

We propose the high order energy stable numerical method to solve the phase-field crystal equation. The Convex Splitting Runge–Kutta method is a simple unified framework to solve the gradient flow considering the energy stability. Since the phase-field crystal equation is an example for the gradient flow and the convex splitting strategy can be applicable, the combination of two idea is reasonable. We present numerical experiments to show the numerical accuracy and stability of the proposed methods.

REFERENCES

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