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Analytic study of solutions for the Cahn-Hilliard equation. (Chinese. English summary)

Summary: Based on the Lie symmetry analysis, the symmetry group of the Cahn-Hilliard equation is studied and the corresponding one-dimensional optimal system is constructed. The reduced equations and group invariant solutions associated to the optimal system are discussed.

MSC:
35B06 Symmetries, invariants, etc. in context of PDEs
35G20 Nonlinear higher-order PDEs

Keywords:
Cahn-Hilliard equation; Lie symmetry analysis; optimal system; group-invariant solutions