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Painlevé analysis and exact solutions of nonintegrable systems. (English) [Zbl 1100.35099](#)

Mladenov, Ivaïlo (ed.) et al., Proceedings of the 7th international conference on geometry, integrability and quantization, Sts. Constantine and Elena, Bulgaria, June 2–10, 2005. Sofia: Bulgarian Academy of Sciences (ISBN 954-8495-30-9/pbk). 280-291 (2006).

Summary: We consider the cubic complex Ginzburg-Landau equation. Applying Hone's method, based on the use of the Laurent series solutions and the residue theorem, we prove that this equation has no elliptic standing wave solutions. This result supplements Hone's, result, that this equation has no elliptic travelling wave solutions. It is shown that Hone's method can be applied to a system of polynomial differential equations more effectively than to an equivalent differential equation.

For the entire collection see [\[Zbl 1089.53004\]](#).

MSC:

[35Q55](#) NLS equations (nonlinear Schrödinger equations)

[37K20](#) Relations of infinite-dimensional Hamiltonian and Lagrangian dynamical systems with algebraic geometry, complex analysis, and special functions

[30B50](#) Dirichlet series, exponential series and other series in one complex variable

Cited in **1** Document

Keywords:

cubic complex Ginzburg-Landau equation; Laurent series; elliptic standing wave solutions