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Extended F -expansion method and periodic wave solutions for the generalized Zakharov equations. (English) Zbl 1181.35255

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Summary: We present an extended F -expansion method for finding periodic wave solutions of nonlinear evolution equations in mathematical physics, which can be thought of as a concentration of extended Jacobi elliptic function expansion method proposed more recently. By using the extended F -expansion, without calculating Jacobi elliptic functions, we obtain simultaneously a number of periodic wave solutions expressed by various Jacobi elliptic functions for the generalized Zakharov equations. In the limit cases, the solitary wave solutions are obtained as well.

MSC:

35Q53 KdV equations (Korteweg-de Vries equations)

35B10 Periodic solutions to PDEs

Cited in **56** Documents

Keywords:

extended F -expansion; generalized Zakharov equations; periodic wave solutions; Jacobi elliptic functions; solitary wave solutions

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