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A new form of Bäcklund transformations and its relation to the inverse scattering problem.

(English) [Zbl 1168.37322](#)

[Prog. Theor. Phys.](#) 52, No. 5, 1498-1512 (1974).

Summary: We present a new form of Bäcklund transformations which gives a unified method of finding Bäcklund transformations for solutions of certain nonlinear evolution equations and constructing the inverse scattering problem for solving the initial-value problem. We consider the sine-Gordon equation, the modified Korteweg-de Vries equation and the Korteweg-de Vries equation as examples.

MSC:

[37K35](#) Lie-Bäcklund and other transformations for infinite-dimensional Hamiltonian and Lagrangian systems Cited in **118** Documents

[37K15](#) Inverse spectral and scattering methods for infinite-dimensional Hamiltonian and Lagrangian systems

[35Q53](#) KdV equations (Korteweg-de Vries equations)

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