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Summary: An extended simplest equation method is proposed to seek exact travelling wave solutions of nonlinear evolution equations. As applications, many new exact travelling wave solutions for several forms of the fifth-order KdV equation are obtained by using our method. The forms include the Lax, Sawada-Kotera, Sawada-Kotera-Parker-Dye, Caudrey-Dodd-Gibbon, Kaup-Kupershmidt, Kaup-Kupershmidt-Parker-Dye, and the Ito forms.

MSC:
35Q53 KdV equations (Korteweg-de Vries equations)
35C07 Traveling wave solutions
35A24 Methods of ordinary differential equations applied to PDEs

Keywords:
extended simplest equation method; travelling wave solutions; fifth-order KdV equation

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References:
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