EXACT SOLUTIONS OF SOME NONLINEAR SYSTEMS OF PARTIAL DIFFERENTIAL EQUATIONS
BY USING THE FUNCTIONAL VARIABLE METHOD

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Abstract. In this paper, we will employ the functional variable method for solving some nonlinear systems of partial differential equations which are very important in applied sciences, namely, the generalized Drinfel’d-Sokolov-Wilson system, Bogoyavlenskii equations and Davey-Stewartson equations. This approach provides a more powerful mathematical tool for solving nonlinear differential equations which can be converted to a second-order ordinary differential equation through the travelling wave transformation.


Key words. Functional variable method, Generalized Drinfel’d-Sokolov-Wilson system, Bogoyavlenskii equations, Davey-Stewartson equations, Nonlinear system.

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Received October 28, 2014
Accepted April 6, 2015
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