THE (G'/G)-EXPANSION METHOD TO THE GENERALISED DERIVATIVE NON-LINEAR SCHRODINGER'S EQUATION

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(G'/G)-expansion method is a straightforward and reliable mathematical tool for constructing traveling wave solutions of non-linear evolutionary equations that occur in engineering and mathematical physics. The derivative non-linear Schrodinger's equation (DNLS) equation is a canonical dispersive equation that can be obtained in a long-wave. It is shown that a physical system described by a DNLS equation without a dissipative term may support the propagation of shockwaves. In this work, exact traveling wave solutions to the generalised DNLS equation were obtained using the (G'/G)-expansion method. The travelling wave solutions were expressed by the hyperbolic functions, the trigonometric functions and the rational functions. For some specific choice of parameters, the solitary wave solutions were also derived from the traveling waves solution. Further, the solution obtained was compared with the solution derived by other existing method.

Keywords: (G'/G)-expansion method, Generalised derivative non-linear Schrodinger's equation, Travelling wave solutions