



**CONSTRUCTING THE EXACT SOLUTIONS TO THE
PERTURBED NONLINEAR SCHRÖDINGER'S EQUATION
WITH KERR LAW NONLINEARITY BY THE COMPLETE
DISCRIMINATION SYSTEM FOR POLYNOMIAL METHOD**

Jin-Yan Hu

Abstract

Under function transform and the traveling wave transformation, we turned the perturbed nonlinear Schrödinger's equation into an ordinary equation. Then by the complete discrimination system for polynomial method and the direct integral method, we obtained the classification of all single traveling wave solutions to the perturbed nonlinear Schrödinger's equation.

Keywords and phrases: complete discrimination system for polynomial method, the perturbed nonlinear Schrödinger's equation with Kerr law nonlinearity, traveling wave solutions.

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