

Multiple-Lump-Type Solutions of the 2D Toda Equation

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Abstract : In this paper, a 2d Toda equation is studied, which is a classical integrable system and plays a vital role in mathematics, physics and other areas. New lump-type solution is constructed by using the Hirota bilinear method. One interesting feature of this research is that this lump-type solutions possesses two types of multiple-lump-type waves, which are one- and two-lump-type waves. Moreover, the corresponding 3d plots, density plots and contour plots are given to show the dynamical features of the obtained multiple-lump-type solutions.

Keywords : 2d Toda equation, Hirota bilinear method, Lump-type solution, multiple-lump-type solution

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