Localized interaction solutions of the (2+1)-dimensional Ito Equation

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Abstract

Localized interaction solutions of the (2+1)-dimensional Ito equation with free parameters are obtained by using a Hirota bilinear transformation. Various plots with particular choices of the involved parameters are made to show energy distributions and dynamical properties of the special exact solutions. This phenomenon may provide us with interesting information on dynamics in the higher-dimensional nonlinear world.

Full Text

Due to technical limitations, full-text HTML conversion of this manuscript could not be completed. However, the manuscript can be downloaded and accessed as a PDF.

Figures

Figure 1

Spatiotemporal structure of solution u with the parameter selections (a): $t = 2$; (b): $t = -5$. and contour plot (c): $t = 2$; (d): $t = -5$.

Figure 2

Spatiotemporal structure of solution u with the parameter selections (a): $t = 2$; (b): $t = -5$. and contour plot (c): $t = 2$; (d): $t = -5$.

(a)

(b)

(c)

(d)

Figure 3

Spatiotemporal structure of solution u with the parameter selections (a): $t = 2$; (b): $t = -5$. and contour plot (c): $t = 2$; (d): $t = -5$.

(a)

(b)

Figure 4

Spatiotemporal structure of solution u (a) and contour plot (b).

(a)

(b)

Figure 5

Spatiotemporal structure of solution u (a) and contour plot (b).

(a)

(b)

(c)

(d)

Figure 6

Spatiotemporal structure of solution u with the parameter selections (a): $t = 2$; (b): $t = -5$ and contour plot (c): $t = 2$; (d): $t = -5$.

(a)

(b)

(c)

(d)

Figure 7

Spatiotemporal structure of solution u with the parameter selections (a): $t = 2$; (b): $t = -5$ and contour plot (c): $t = 2$; (d): $t = -5$.

Figure 8

Spatiotemporal structure of solution u with the parameter selections (a): $t = 2$; (b): $t = -5$ and contour plot (c): $t = 2$; (d): $t = -5$.