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Regarding new traveling wave solutions for the mathematical model arising in telecommunications. (English) Zbl 1478.78055

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Summary: This research paper focuses on the application of the tanh function method to find the soliton solutions of the (2+1)-dimensional nonlinear electrical transmission line model. Materials used to form a transmitting line are very important to transmit electric charge. In this sense, we find some new voltage behaviors such as dark, trigonometric, and complex function solutions. Choosing some suitable values of parameters, we present some various surfaces of results obtained in this paper. These results play an important role in telecommunications lines used to stand for wave propagations.

MSC:

78A60 Lasers, masers, optical bistability, nonlinear optics
78A40 Waves and radiation in optics and electromagnetic theory
35C08 Soliton solutions
35C07 Traveling wave solutions
35C09 Trigonometric solutions to PDEs
35Q60 PDEs in connection with optics and electromagnetic theory

Keywords:

telecommunications; nonlinear electrical transmission line model; soliton solutions; trigonometric solutions; traveling wave solutions

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