

عنوان مقاله:

Solitary waves with two new nonlocal boussinesq types equations using a couple of integration schemes

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خلاصه مقاله:

The Boussinesq equation and its related types are able to provide a significant explanation for a variety of different physical processes that are relevant to plasma physics, ocean engineering, and fluid flow. Within the framework of shallow water waves, the aim of this research is to find solutions for solitary waves using newly developed nonlocal models of Boussinesq's equations. The extraction of bright and dark solitary wave solutions along with bright-dark hybrid solitary wave solutions is accomplished through the implementation of two integration algorithms. The general projective Riccati equations method and the enhanced Kudryashov technique are the ones that have been implemented as techniques. The enhanced Kudryashov method combines the benefits of both the original Kudryashov method and the newly developed Kudryashov method, which may generate bright, dark, and singular solitons. The Projective Riccati structure is determined by two functions that provide distinct types of hybrid solitons. The solutions get increasingly diverse as these functions are combined. The techniques that were applied are straightforward and efficient enough to provide an approximation of the solutions discovered in the research. Furthermore, these techniques can be utilized to solve various kinds of nonlinear partial differential equations in mathematical physics and engineering. In addition, plots of the selected solutions in three dimensions, two dimensions, and contour form are provided.

کلمات کلیدی:

Nonlocal, Boussinesq, water waves, Kudryashov, Riccati

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