Quasi-Periodic, Periodic Waves, and Soliton Solutions for the Combined KdV-mKdV Equation

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By introducing the generalized Jacobi elliptic function, a new improved Jacobi elliptic function method is used to construct the exact travelling wave solutions of the nonlinear partial differential equations in a unified way. With the help of the improved Jacobi elliptic function method and symbolic computation, some new exact solutions of the combined Korteweg-de Vries-modified Korteweg-de Vries (KdV-mKdV) equation are obtained. Based on the derived solution, we investigate the evolution of doubly periodic and solitons in the background waves. Also, their structures are further discussed graphically.