

A multidimensional superposition and singular manifold expansions

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ABSTRACT

The concept of multidimensional superposition explaining the existence both classical solitonic and more complex wave interactions [1] is proposed for partial differential equations. Nonlinear PDEs associated with the system of the Riccati equations via singular manifold expansions [2] are considered, and the existence of the KdV-type bell/kink and pole solutions with solitonic properties is shown for them [3]. For the simplest expansion possible interactions are classified, and their qualitative features are indicated. Other type interactions, including inelastic ones, are indicated as well.

References

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