

## Fission and Fusion of Solitons for the (1+1)-Dimensional Kupershmidt Equation

YING Jin-Ping

Ningbo Business Technology School, Ningbo 315012, China  
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Abstract: By means of the heat conduction equation and the standard truncated Painlevé expansion, the (1+1)-dimensional Kupershmidt equation is solved. Some significant exact multi-soliton solutions are given. Especially, for the interaction of the multi-solitons of the Kupershmidt equation, we find that a single (resonant) kink or bell soliton may be fissioned to several kink or bell solitons. Inversely, several kink or bell solitons may also be fused to one kink or bell soliton.

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Key words: truncated Painlevé expansion, (1+1)-dimensional Kupershmidt equation, resonant solitons, soliton fission and fusion

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