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Summary: We derive a new \((2 + 1)\)-dimensional Korteweg-de Vries 4 (KdV4) equation by using the recursion operator of the KdV equation. This study shows that the new KdV4 equation possess multiple soliton solutions the same as the multiple soliton solutions of the KdV hierarchy, but differ only in the dispersion relations. We also derive other traveling wave solutions.

MSC:
35Q53 KdV equations (Korteweg-de Vries equations)

Keywords: KdV equation; recursion operator; multiple soliton solutions

Software:
PDERecursionOperator

Full Text: DOI

References:
[18] Wazwaz, Multiple-soliton solutions for the KP equation by Hirota’s bilinear method and by the tanh-coth method, Applied


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