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**Kink-type states in the Sharma-Tasso-Olver model.** (English. Russian original) [Zbl 1232.35143](#)  
*Russ. Phys. J.* 54, No. 3, 391-392 (2011); translation from *Izv. Vyssh. Uchebn. Zaved., Fiz.*, No. 3, 111-112 (2011).

From the text: The nonlinear model for soliton-like objects (for example kinks) described by the Sharma-Tasso-Olver (STO) equation is considered. Different solutions of this equation and its properties have been investigated in ample detail [*S. Wang, X.-Y. Tang and S.-Y. Lou*, *Chaos Solitons Fractals* 21, No. 1, 231–239 (2004; [Zbl 1046.35093](#)); *Z.-J. Lian and S.Y. Lou*, *Nonlinear Anal., Theory Methods Appl., Ser. A, Theory Methods* 63, No. 5–7, A, e1167–e1177 (2005; [Zbl 1224.37038](#)); *B. Erbaş and E. Yusufoglu*, *Chaos Solitons Fractals* 41, No. 5, 2326–2330 (2009; [Zbl 1198.81087](#)); *A. Chen*, “Multi-kink solutions and soliton fission and fusion of Sharma-Tasso-Olver equation”, *Phys. Lett., A* 374, No. 23, 2340–2345 (2010)]. It has been demonstrated that the equation is integrable in the sense of existence of the Lax pair of operators. Its solutions in the form of soliton (kink) and a bound state of two solitons were obtained. Because the examined problem is urgent, search for new exact solutions is of great interest. In the present work, new solutions for the STO equation which describe kink-like states are constructed by the Hirota method [*M. J. Ablowitz and H. Segur*, *Solitony i metod obratnoj zadachi* (Russian). Moskva: “Mir” (1987; [Zbl 0621.35003](#)); translation of: *Solitons and the inverse scattering transform*. SIAM Studies in Applied Mathematics, 4. Philadelphia: SIAM (1981; [Zbl 0472.35002](#))].

**MSC:**

[35Q51](#) Soliton equations  
[35C08](#) Soliton solutions

**Keywords:**

[kink](#); [Sharma-Tasso-Olver equation](#); [Hirota method](#)

**Full Text:** [DOI](#)

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