Analytic Solution of the Sharma-Tasso-Olver Equation by Homotopy Analysis Method

Saeid Abbasbandy[a], Mahnaz Ashtiani[b], and Esmail Babolian[b]

[a] Department of Mathematics, Science and Research Branch, Islamic Azad University, Tehran, 14778, Iran
[b] Department of Computer Sciences, Tarbiat Moallem University, Tehran 15618, Iran

Reprint requests to S. A.; E-mail: abbasbandy@yahoo.com

An analytic technique, the homotopy analysis method (HAM), is applied to obtain the kink solution of the Sharma-Tasso-Olver equation. The homotopy analysis method is one of the analytic methods and provides us with a new way to obtain series solutions of such problems. HAM contains the auxiliary parameter $\hbar$ which gives us a simple way to adjust and control the convergence region of series solution. "Due to this reason, it seems reasonable to rename $\hbar$ the convergence-control parameter" [1].