**Coalescence and Interaction of Solitons in the Coupled Korteweg–de Vries System**[1] WAI CHOI CHUNG, KWOK WING CHOW, Department of Mechanical Engineering, University of Hong Kong, Pokfulam Road, Hong Kong — There are many physical systems which are governed by the classical Korteweg–de Vries equation. One of the prominent examples is the shallow water wave in fluid dynamics. In recent years, a coupled Korteweg–de Vries system has been proposed to describe fluids in a two-layer flow, and coherent structures in terms of solitons are found. We studied the coupled Korteweg–de Vries system by means of the Hirota bilinear method. Soliton and breather solutions are constructed. Localized pulses which result from the coupling of waves can be formed. The structure of the localized pulses becomes asymmetric as the control parameter varies. The coalescence and interaction of solitons in the coupled Korteweg–de Vries system will be discussed.

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