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PEAKS OF FULL INTERACTIONS OF KORTEWEG de VRIES (KdV) SOLITONS

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Abstract. This paper describes several aspects of soliton interactions patterns governed by the Korteweg-de Vries equation. Hirota bilinear method was used to obtain the analytical solution of multi-solitons solutions of KdV equation. Various graphical outputs and interaction patterns of soliton that happen before, during and after full interactions will be explored. The shapes of three different types of peaks such as single, double and flat peak was investigated and the conditions was established to determine the shape of such peaks. These interactions patterns during full interaction were very fascinating and these results are new involving three and four solitons. Maple programming was used to obtain explicit multi-solitons solutions of KdV equation and various graphical outputs.

Keywords. Soliton; Hirota Bilinear Method; Korteweg-de Vries equation.

AMS (MOS) subject classification: 35Q53

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