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Decompositions of the KdV 2-soliton.

I will present a summary of attempts in the prior literature to “understand” the soliton interaction by decomposing the solution $u(x, t)$ into a sum $u_1(x, t) + u_2(x, t) + \dots$. Of course, there is not a unique way to do this, and that is why it is interesting to compare the existing results. Furthermore, I will present (and defend) my own novel decompositions which I think are particularly interesting and suggest a different sort of interaction than has previously been considered.

[The contents of the talk are based on the paper The Journal of Nonlinear Science Volume 16 Number 2 (2006) pages 179-200 written jointly with students N. Benes and K. Young.] (Received August 16, 2007)