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John P. Albert* (jalbert@ou.edu), Dept. of Mathematics, University of Oklahoma, Norman, OK 73019, **Jerry L. Bona** (bona@math.uic.edu), Dept. of Mathematics, Statistics, and Computer Science, University of Illinois at Chicago, Chicago, IL 60607, and **Nghiem V. Nguyen** (nvnguyen@math.purdue.edu), Dept. of Mathematics, Purdue University, West Lafayette, IN 47907-2067. *On the stability of KdV multi-solitons.*

The stability of KdV multi-solitons has been studied by Maddocks and Sachs and by Martel, Merle, and Tsai. In particular, Martel et al. have shown that an H^1 solution of KdV can be made to stay arbitrarily close to a modulated multi-soliton solution for all time by taking its initial data sufficiently close to that of the multi-soliton. Here we study the behavior of the modulated phase parameters in the modulated multi-soliton solution. We show that they can be taken to be differentiable functions of time t for all $t > 0$, and that their derivatives remain close to the wavespeeds of the individual soliton components. (Received September 09, 2006)