The Generalizations of the Peakon's Systems

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Abstract:

We present three different methods of the generalization of the peakon's systems. The first based on the generalizations of the hamiltonian structures of the Camassa - Holm and Degasperis - Procesi equation. The next one uses the Lax representation for the generalization while in the last we consider the higher order non-linearity in the Pearson's equations. We present two different vectorial generalization of the cubic non-linearity in the peakon system.