Peakon, Pseudo-Peakon, and Cuspon Solutions for Two Generalized Camassa-Holm Equations

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We study peakon, cuspon, and pseudo-peakon solutions for two generalized Camassa-Holm equations. Based on the method of dynamical systems, the two generalized Camassa-Holm equations are shown to have the parametric representations of the solitary wave solutions such as peakon, cuspon, pseudo-peakons, and periodic cusp solutions. In particular, the pseudo-peakon solution is for the first time proposed in our paper. Moreover, when a traveling system has a singular straight line and a heteroclinic loop, under some parameter conditions, there must be peaked solitary wave solutions appearing.