Surfaces from Deformation of Parameters

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ABSTRACT

We construct 2-surfaces from modified Korteweg-de Vries (mKdV) and sine-Gordon (SG) soliton solutions by the use of parametric deformations. For each case there are two types of deformations. The first one gives 2-surfaces on spheres and the second one gives highly complicated 2-surfaces in R3. The SG surfaces that we obtained are not the critical points of functional where the Lagrange function is a polynomial function of the Gaussian (K) and mean (H) curvatures of the surfaces. We also give the graph of interesting mKdV and SG surfaces arising from parametric deformations.