

Position Vectors of Special Smarandache Curves in Galilean 3-Space

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ABSTRACT

In this work, we have studied general position vectors of special Smarandache curves with Darboux apparatus of an arbitrary curve on a surface in the three-dimensional Galilean space. The main aim of this paper is to determine position vector of Smarandache curves of arbitrary curve on a surface in the three-dimensional Galilean space in terms of geodesic, normal curvature and geodesic torsion with respect to the standard frame. The results of this work include providing Smarandache curves of some special curves such as geodesics, asymptotic curves and line of curvatures on a surface in the three-dimensional Galilean space. Firstly, Smarandache curves of geodesics that are circular helix, generalized helix, Salkowski curve and anti-Salkowski curve have been investigated in Galilean space and their position vectors are obtained. Secondly, the position vectors, have been given for Smarandache curves of asymptotics that are circular helix, generalized helix, Salkowski curve and anti-Salkowski curve have been given in the three-dimensional Galilean space. Then, the position vectors have been given for Smarandache curves of line of curvature that are circular helix, generalized helix, Salkowski curve and anti-Salkowski curve have been given in the three-dimensional Galilean space. Exemplarily; the position vectors of Smarandache curves of any curve on the surface are given. Finally; graphs of these Smarandache curves are given.

Keywords: Special Smarandache curve, Darboux frame, Geodesic curve, Galilean space.

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