ON SLANT HELICES AND GENERAL HELICES IN EUCLIDEAN n-SPACE

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Abstract

In this paper, in Euclidean n-space E^n, we investigate the relation between slant helices and spherical helices. Moreover, in E^n, we show that a slant helix and the tangent indicatrix of the slant helix have the same axis (or direction). Also, we give the important relations between slant helices, spherical helices in E^n and geodesic curves on a helix hypersurface in E^n.

Keywords: Slant helices, General helices, Spherical helices, Ttangent indicatrix, Helix hypersurfaces

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1. Introduction

Slant helice is one of the most important topics of differential geometry. Izumiya and Takeuchi have investigated the many properties of slant helices that the normal lines make a constant angle with a fixed direction in Euclidean 3-space [14]. Moreover, they proved that a space curve is a slant helix if and only if the geodesic curvature of the principal normal of the curve is a constant function [14].

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