Some Classifications of Submanifolds in Semi-Euclidean Spaces

Considering Their Position Vector

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Abstract. Position vector is one of the most basic objects studied to understand geometrical properties of submanifolds of (semi-)Euclidean spaces. In this direction, the notion of generalized constant ratio (GCR) submanifolds has been introduced very recently. Let M be a hypersurface of a semi-Euclidean space E_s^m and x its position vector. M is said to be a generalized constant ratio hypersurface if the tangential component x^T of x is a principal direction of M.

On the other hand, biharmonic submanifolds have cought interest of many geometers so far. A submanifold M is said to be biharmonic if $\Delta^2 x = 0$ and biconservative if a weaker condition is satisfied.

In this talk, we will give a summary of results very recently obtained on hypersurfaces in semi-Euclidean spaces considering their position vector. We will also present some open problems that we are currently studying.