



Geometry Webinar AmSur/AmSul

Infinitesimally Bonnet bendable hypersurfaces

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Resumo: The classical Bonnet problem is to classify all immersions $f: M^2 \rightarrow \mathbb{R}^3$ into Euclidean three-space that are not determined, up to a rigid motion, by their induced metric and mean curvature function. The natural extension of Bonnet problem for Euclidean hypersurfaces of dimension $n \geq 3$ was studied by Kokubu. In this talk we report on joint work with M. Jimenez, in which we investigate an infinitesimal version of Bonnet problem for hypersurfaces with dimension $n \geq 3$ of any space form, namely, we classify the hypersurfaces $f: M^n \rightarrow Q^{n+1}_c$, $n \geq 3$, of any space form Q^{n+1}_c of constant curvature c , for which there exists a (non-trivial) one-parameter family of immersions $f_t: M^n \rightarrow Q^{n+1}_c$, with $f_0 = f$, whose induced metrics g_t and mean curvature functions H_t coincide "up to the first order", that is, $\partial/\partial t|_{t=0} g_t = 0 = \partial/\partial t|_{t=0} H_t$.