CHEN-WILLMORE SUBMANIFOLDS SHAPED ON CLOSED GENERALIZED ELASTICAE

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Dedicated to Bang-Yen Chen

Abstract

In this survey we review some recent results on Willmore surfaces and Chen-Willmores submanifolds. We first show how they are related to important models in the theory of elastic surfaces and membranes and show the strong connection between elastic curves in 2-dimensional space forms and the critical points of the elastic energy. Then, we will describe how the conformal invariance of the Chen-Willmore energy along with the Palais' symmetric criticality principle can be used in order to produce effective methods for the construction of Chen-Willmore submanifolds.

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