

An exploration of bubbling phenomenons for Willmore surfaces

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The Willmore energy naturally arises as a measure of how curved an immersed surface in \mathbb{R}^3 is, with interesting applications to general relativity (namely the Hawking mass). Critical points of this energy are called Willmore surfaces, and sequences of Willmore surfaces are subject to concentration-compactness phenomenons, and thus to bubbling. After exposing the state of the art I will study the specific case of simple minimal bubbles and detail consequences on the compactness of Willmore surfaces below certain thresholds.