FACOLTÀ DI SCIENZE MATEMATICHE, FISICHE E NATURALI
DIPARTIMENTO DI MATEMATICA E FISICA "NICCOLÒ TARTAGLIA"

A capillarity approach for the regularity of soap films

Interviene
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Abstract
Joint work with Salvatore Stuvard (UNIMI) and Bozhidar Velichkov (UNIPI).

We characterize boundary regularity for a variational model of soap film spanning a tubular neighborhood of a curve. Inspired by [1], soap films are chosen to be sets of finite perimeter containing a fixed volume and satisfying a topological spanning condition. In this talk, for a planar curve as midline of a tubular neighborhood, we show that minimizers are normal smooth graphs with constant mean curvature constructed over the plane and forming a contact angle equal to $\pi/2$ [2].

References
[1] D. King, F. Maggi, S. Stuvard, *Plateau's problem as a singular limit of capillarity problems*, Communications on Pure and Applied Mathematics, 75:5 2022, pp. 895−969.
[2] G. Bevilacqua, S. Stuvard, B. Velichkov; *Regularity of a free-boundary Plateau problem*, in preparation.

Conferenza

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