

Seminario di Analisi

*Dipartimento di Matematica e Applicazioni
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Università degli Studi di Napoli Federico II*

Mercoledì 30 Gennaio 2019 – Sala Professori I Livello, h. 15:00

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FREE BOUNDARY MINIMAL SURFACES: A SURVEY OF RECENT RESULTS

ABSTRACT. Besides their self-evident geometric significance, which can be traced back at least to Courant, free boundary minimal hypersurfaces also naturally arise in partitioning problems for convex bodies, in capillarity problems for fluids and, as has significantly emerged in recent years thanks to work of Fraser and Schoen, in connection to extremal metrics for Steklov eigenvalues for manifolds with boundary (i. e. for eigenvalues of the corresponding Dirichlet-to-Neumann map).

Motivated by a wealth of existence results, various fundamental geometric questions have been recently investigated and I will present a broad-spectrum overview of the state of the art on the subject, with special emphasis on aspects related to classification, strong compactness and effective Morse index bounds. This lecture is addressed to the general mathematical audience.

ETH – ZURIGO

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