SEMINAR ON DIFFERENTIAL EQUATIONS - NMMA431
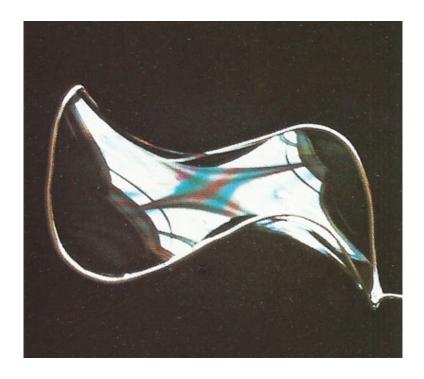
ELLIPTIC PARTIAL DIFFERENTIAL EQUATIONS AND FREE BOUNDARY PROBLEMS

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Outline: In this seminar we will discuss some properties of elliptic partial differential equations. Starting from basic properties of solutions to Laplace equation we will derive quantitative and qualitative estimates; known as *Schauder theory*. These estimates will provide the basis to investigate so called *Free boundary problems*. Here the shape of the domain is part of the solution.

Objective: The aim is to introduce a background in some techniques that are important for the current challenges in mathematics and its applications. The fields and techniques introduced in the course relate to possible subjects of a master thesis or beyond.

Requirements: Some preliminary knowledge in the studies of partial differential equation is required. Especially students that have attended *Introduction to partial differential equations* are very welcome.

Time: Wednesday at 9:00 am   **Room:** K5   **Start:** 26.02.2017