

## ANALYSIS SEMINAR

## Recent trends in regularity theory of nonlinear PDEs

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**Abstract**. In this Lecture we will address some recent progresses in regularity theory of nonlinear PDEs and Free Boundary Problems, which were developed in the last years in my stay in the Department of Mathematics at Universidad de Buenos Aires (Argentine).

The insights behind the exposition consist of explaining their mathematical relevance, intrinsic difficulties in being overcome and applications in other classes of problems.

In the end of the Lecture we will present new directions and some mathematical expectations for the next years in my stay in the Dept. of Math. at UnB (Brazil).