

ANALYSIS & PDEs seminar

STABLE SOLUTIONS TO SEMILINEAR ELLIPTIC EQUATIONS ARE SMOOTH UP TO DIMENSION 9

SPEAKER: Xavier Cabré (ICREA and Universitat Politècnica de Catalunya)

DATE: Wednesday, 25th November 2020 - 15:00

PLACE: Online - Instructions:
<https://sites.google.com/view/analysis-pde-seminar/>

ABSTRACT: The regularity of stable solutions to semilinear elliptic PDEs has been studied since the 1970's. In dimensions 10 and higher, there exist singular stable energy solutions. In this talk I will describe a recent work in collaboration with Figalli, Ros-Oton, and Serra, where we prove that stable solutions are smooth up to the optimal dimension 9. This answers to an open problem posed by Brezis in the mid-nineties concerning the regularity of extremal solutions to Gelfand-type problems.