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THE STATE UNIVERSITY OF NEW JERSEY
MATHEMATICS DEPARTMENT
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24th D'ATRI MEMORIAL LECTURES

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ETH ZURICH

“The De Giorgi Conjecture for the Half-Laplacian in Dimension 4”

ABSTRACT: The famous De Giorgi conjecture for the Allen-Cahn equation states that global monotone solutions are 1D if the dimension is less than 9. This conjecture is motivated by classical results about the structure of global minimal surfaces. The analogue of this conjecture in half-spaces can be reduced to the study of the problem in the whole space for the Allen-Cahn equation with the half-Laplacian. In these lectures I will first give a general overview of the problem and then present a recent result with Joaquim Serra, where we prove the validity of the De Giorgi conjecture for stable solutions in dimension 3, that implies the result on monotone solutions in dimension 4.

Monday, February 4, 2019 – Part I

1:40 – 2:40pm - Hill Center 705

*** light refreshments – 2:50pm in Hill 703 ***

Wednesday, February 6, 2019 – Part II

10:30 – 11:30am - Hill Center 705

*** light refreshments – 9:30am in 703 ***

For further information:

<https://webdevel.sas.rutgers.edu/cms/math/news-events/lecture-series/1512-joseph-d-atr-memorial-lectures-2>