IST AUSTRIA
Institute of Science and Technology

Mathematics and CS Seminar

Stably irrational hypersurfaces of small slopes

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Host: Timothy Browning

The first part of the talk starts with an overview on the rationality problem for hypersurfaces. This is an old and classical question, which asks whether a given smooth hypersurfaces in projective space is rational, i.e. birational to projective space. We then explain the following recent progress on this question: over any uncountable field of characteristic different from two, a very general hypersurface of dimension n>2 and degree at least log_2(n)+2 is not stably rational. This significantly improves earlier results of Koll\'ar and Totaro. In the second half of the talk, we will sketch the proof of this result. If time allows, we might also mention that as a byproduct of our proof, one obtains new counterexamples to the integral Hodge conjecture, answering a question of Voisin and Colliot-ThlneVoisin.

Thursday, December 13, 2018 01:30pm - 03:30pm

IST Austria Campus Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

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