Mathematics and CS Seminar

Arithmetic of zero-cycles on products of Kummer varieties and K3 surfaces

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Host: Timothy Browning

In the first part of the talk, I will introduce some of the strategies used when studying the arithmetic of rational points and zero-cycles on varieties over number fields. In particular, I will talk about local-global principles and obstruction sets (e.g. the Brauer-Manin set), and I will explain how one could use the theory of obstruction sets to classify varieties according to the arithmetic behaviour of their rational points and zero-cycles.In the second part of the talk, I will present the following joint work with Rachel Newton. In the spirit of some results by Yongqi Liang, we relate the arithmetic of rational points to that of zero-cycles for the class of Kummer varieties. In particular, if X is any Kummer variety over a number field k, we show that if the BrauerManin obstruction is the only obstruction to the existence of rational points on X over all finite extensions of k, then the BrauerManin obstruction is the only obstruction to the existence of a zero-cycle of any odd degree on X. Building on this result and on some other recent results by Ieronymou, Skorobogatov and Zarhin, we further prove a similar Liang-type result for products of Kummer varieties and K3 surfaces over k.

Tuesday, September 18, 2018 01:00pm - 03:00pm
Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

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https://ista.ac.at/en/campus/how-to-get-here/ The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.