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 Brauer-Manin obstruction is the only obstruction to the existence of rational points on $X$ over all finite extensions of $k$, then the Brauer-Manin 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
IST Austria Campus Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

This invitation is valid as a ticket for the IST Shuttle from and to Heiligenstadt Station. Please find a schedule of the IST Shuttle on our webpage: http://ist.ac.at/fileadmin/user_upload/pdfs/IST_shuttle_bus.pdf The IST Shuttle bus is marked IST Shuttle (#142) and has the Institute Logo printed on the side.