Algebra Seminar

An arithmetic count of the lines on a cubic surface.

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Abstract: A celebrated 19th century result of Cayley and Salmon is that a smooth cubic surface over the complex numbers contains exactly 27 lines. Over the real numbers, it is a lovely observation of FinashinKharlamov and OkonekTeleman that while the number of real lines depends on the surface, a certain signed count of lines is always 3. We extend this count to an arbitrary field k using an Euler number in A1-homotopy theory. The resulting count is valued in the Grothendieck-Witt group of non-degenerate symmetric bilinear forms. This is joint work with Jesse Kass.

Tuesday, November 14, 2017, 4:00 pm
Mathematics and Science Center: W306

Mathematics and Computer Science
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