

Algebraic Geometry Seminar

Gröbner degeneration in Schubert calculus

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Abstract: Roughly speaking, enumerative geometry is a field whose goal is to count the "typical" number of solutions to certain types of families of polynomial equations, particularly when that number is finite. With a great deal of effort, especially in the wake of the work of Hermann Schubert around the turn of the 20th century, mathematicians made rigorous the notion of a "typical" answer and also made rigorous certain simplifying strategies Schubert had suggested. Indeed, making Schubert's arguments precise was the topic of Hilbert's 15th problem, and the field born from this study is now called Schubert calculus. The simplifications Schubert had suggested entail sliding or deforming the geometric objects to be studied while preserving the total number of whatever it is one wants to count. These strategies are what are now called degeneration techniques. In this talk, we will describe some modern questions in Schubert calculus and explain how these questions are studied via Gröbner degeneration in particular.

Monday, November 4 at 3:00 PM in 636 SEO