



The Math/Stats Colloquium
Department of Mathematics and Statistics
San José State University



Federico Ardila

SFSU

Positroids, $1/e^2$, and a conjecture of Da Silva

OCTOBER 21, 2015, MH320

Abstract: Positroids are beautiful objects which have been discovered independently at least twice: In 1987 Da Silva defined “positively oriented matroids” as generalizations of the cyclic polytope, the polytope of n vertices and d dimensions with the largest possible number of faces, and in 2006 Postnikov defined “positroids” in his study of matrices whose maximal minors are non-negative. They have received great attention recently, since Arkani Hamed et al. found intriguing applications to quantum field theory.

We prove that the theories of “positroids” and “positively oriented matroids” are equivalent (a 1987 conjecture of Da Silva). Along the way, we prove that the probability that a positroid is connected is $1/e^2$.

Joint with Felipe Rincón and Lauren Williams.

Background: This talk will assume no previous knowledge of positroids, and will be accessible to undergraduates.

About the speaker: Federico Ardila received his Ph.D. from MIT in 2003 and has been at SFSU since 2005. His research interests include algebraic and geometric methods in combinatorics.

SNACKS IN MH331B AT 2:30 PM

TALK STARTS AT 3 PM

For more information, see our full schedule at:

<http://www.math.sjsu.edu/~hsu/colloq/>