

# COMBINATORICS SEMINAR

## *The number of Gallai colorings*

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An edge coloring of the complete graph  $K_n$  is called a Gallai coloring if it does not contain any rainbow triangle, that is, a triangle in which all three edges have distinct colors. Given a set of  $k$  colors and integer  $n$ , we are interested in the number of Gallai colorings of  $K_n$  with colors from the given set. In particular, we show that for  $k$  at most exponential in  $n$ , namely,  $k < 2^{n/4300}$ , almost all Gallai colorings use at most 2 colors. Interestingly, this statement fails for  $k > 2^{n/2}$ .

This is joint work with Josefran O. Bastos and Fabrício S. Benevides (University of Ceará, Brazil).

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Mathematics & Science Center – W301

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