Toronto Colloquium preps

February-20-13
10:04 AM

Title: Trees and wheels and balloons and hoops and why I care.

Abstract. I will be talking about an invariant ζ. For the first 15 minutes I will be talking about its target space, algebra (trees and wheels, or free Lie algebras and cyclic words). For the next 15 minutes I will talk about its domain space, topology (knotted balloons and hoops in 4-space). And in the remaining time I will tell you why I care, though with little detail: It is the universal solution to a topological problem and it has many siblings (who talk to each other). It is explicitly computable. Its target space is in itself a space of "universal formulas in Lie algebras" (that's "the miracle"). It seems to be a complete(?) evaluation a certain gauge theory. It is related to a deep conjecture in Lie theory proven by Alekseev and Meinrenken. It has even-better-computable specializations, including one which is an "ultimate Alexander invariant". And plenty of work remains to be done.

Does it fit? Yes, optimistically.

Compute for the Borromean tangle!

Mention my class next year? ✓