The Kashiwara-Vergne Problem and Topology

Abstract. I will describe a general machine, a close cousin of Taylor's theorem, whose inputs are topics in topology and whose outputs are problems in algebra. There are many inputs the machine can take, and many outputs it produces, but I will concentrate on just one input/output pair. When fed with a certain class of knotted 2-dimensional objects in 4-dimensional space, it outputs the Kashiwara-Vergne Problem (1978, solved by Alekseev-Meinrenken, 2006), a problem about convolutions on Lie groups and Lie algebras.

The KV Conjecture

implies:

Convolutions Statement

"God created the knots, all else in topology is the work of mortals."

Leopold Kronecker (modified)

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