
Hopf25

Vitor Ferreira

University of São Paulo, Brazil

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Braid group actions on quantum invariants of free algebras

Given a finite-dimensional module V over a finite-dimensional Hopf algebra H , the tensor algebra $T(V)$ becomes a module algebra with a linear action by H . It is known that the algebra of invariants $T(V)^H$ of the action of H on $T(V)$ is always free, but very rarely finitely generated. However, taking into account the action of the symmetric groups by place permutations on its homogeneous components, it can be finitely described, when H is cocommutative and semisimple, as shown by Koryukin in 1994. In the present work, we present evidence to support that the same happens if H is taken to be quasi-triangular and the symmetric groups are replaced by the braid groups. This work is the result of a collaboration with Lucia Murakami and Lucas Ogawa and was partially funded by FAPESP (Projeto Tematico 2020/16594-0).