

Hopf Algebras in general and in Combinatorics and Physics : an introduction

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In the following, we will motivate all the requirements of the Hopf Algebras by the consideration of acting operators. We will see that, as such, all the axioms appear naturally.

PLAN

1) Actions

Essentially $V \rightarrow V$ linear - labelled by symbols

2) Composable labels

Semigroups - groups - Lie algebras

3) Operation on representations

Sums (direct) – algebra of this sum : the zero representation – classes of isomorphisms - (tensor) product : groups and Lie algebras ... and in between ?

4) Bi- and Hopf algebras

Thank You

Merci

Dziękuję