

HONOURS SEMINAR

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Representations of Hopf Algebras

Supervised by Allen Herman

Friday, April 12th, 2019

11:00 a.m. – 12:00 p.m.

Mathematics and Statistics Lounge, CW307.20

Abstract: Hopf algebras are vector spaces with a compatible algebra and coalgebra structure and a particular endomorphism called the antipode. Some examples are the group algebra, the universal enveloping algebra of a Lie algebra, and the eight-dimensional Kac-Paljutkin algebra.

I will introduce the representation theory of Hopf algebras and prove the Fundamental Theorem of Hopf Modules. This theorem says the finite-dimensional Hopf modules over a Hopf algebra are free. We will then look at some important consequences of this.

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