Algebra Day Shanghai 2021

2021 年 5 月 22 日　理科 6 号楼三楼 300 号报告厅

时间	报告	主持人
14:10–14:55	吴泉水 (复　ŒÆ): Homological properties of some noncommutative products of algebras	张继[2]
15:00–15:45	乃红 (u À “　‰ŒÆ): On finite-tensor categories and finite-dimensional Hopf algebras	朱胜林
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16:10–16:55	和兵 (同济ŒÆ): Upper finite weakly triangular categories	王卿文
17:00–17:45	苏育才 (同济ŒÆ): Quasifinite representations of the Virasoro-like algebra	姜翠波

组委¬：　¤ 佳睿 高　姜} 波 蒋启¥ ê 家h 覃~ 司梅 武同锁 Ü 1 连 Ü　Ÿ Ù 璞

上海交通大学数学科学学院

摘要

On finite-tensor categories and finite-dimensional Hopf algebras

胡乃红 (华东师范大学 nhhu@math.ecnu.edu.cn)

In the past two decades, finite tensor category has developed into a new research subject. I will give a brief introduction to the aspects of this subject which are related to the studies of finite-dimensional Hopf algebras including some results of my former student Dr. Zhiqiang Yu.

Upper finite weakly triangular categoories

芮和兵 (同济大学 17851@tongji.edu.cn)

I will introduce my joint work with Mengmeng Gao and Linliang Song on upper finite weakly triangular categories. Archetypal examples include cyclotomic oriented Brauer categories, cyclotomic Brauer categories and cyclotomic Kauffman categories. As applications, we use cyclotomic Brauer categories and cyclotomic Kauffman categories (resp., cyclotomic oriented Brauer categories,) to categorify

(1) the $\mathfrak{g}$-module $V(\mathtt{w})$, where $\mathfrak{g}$ is the classical limit of the coideal subalgebra and $V(\mathtt{w})$ is any integral hightest module for either $\mathfrak{sl}_¥$ or $\hat{\mathfrak{sl}}_p$.

(2) $V(-\mathtt{w})\otimes V(\mathtt{w}')$, the tensor product of integral lowest with integral highest weight modules of the same level ℓ for either $\mathfrak{sl}_¥$ or $\hat{\mathfrak{sl}}_p$. This result was expected by Brundan around 2013 and was proved by Brundan and Reynolds when $\ell = 1$.

Quasifinite representations of the Virasoro-like algebra

苏育才 (同济大学, ycsu@tongji.edu.cn)

The Virasoro-like algebra, a natural generalization of the well-known Virasoro algebra, is a Lie algebra closely related to Block type or Cartan type Lie algebras. In this talk, we present some results on quasifinite representations of the Virasoro-like algebra.

Homological properties of some noncommutative products of algebras

吴泉水 (复旦大学 qswu@fudan.edu.cn)

Algebras are supposed to describe “spaces” as functions. As tensor products of algebras corresponding to the usual products for “spaces”, some noncommutative constructions of algebras are viewed as the functions of the imaginary noncommutative products of “spaces”. We try to study the regularity or Gorenstein property of some noncommutative constructions of algebras. In the talk I will start from basic definitions and some general ideas, then I will introduce some related results obtained recently.