

AGNT - QA Learning Group

Fall 2021 and Spring 2022. Wednesdays 3pm - 4pm, 423 HBH (some will attend via Zoom).

Material—

[FFRS] J. Fröhlich, J. Fuchs, I. Runkel, and C. Schweigert. Correspondences of ribbon categories.
Adv. Math. 199 no. 1 (2006) 192-329.
Available [\[here\]](#) or at <https://arxiv.org/pdf/math/0309465.pdf>

Background assumed—

Category theory basics (definition, examples, functors, natural transformations, equivalence, adjunction)
Representation theory / module theory of groups (including Frobenius reciprocity)
[Knowledge of monoidal categories, braidings, algebras would be useful.]

August 25, 2021

Speaker : Chelsea Walton (Rice)

Topic: [FFRS, part of Sections 1 and 2.1] [\[Talk Notes\]](#)

Overview of material, some background on braided monoidal categories

September 8, 2021

Speaker : Chelsea Walton (Rice)

Topic: [FFRS, rest of Section 2.1, 2.2] [\[Talk Notes\]](#)

Ribbon categories and modular tensor categories

Category theory odds & ends - idempotents and retracts

September 22, 2021

Speaker : Harshit Yadav (Rice)

Topic: [FFRS, Section 2.3] [\[Talk Notes\]](#)

Frobenius algebras and modules over algebras in monoidal categories

October 6, 2021

Speaker : Anh Tuong Nguyen (UIUC)

Topic: [FFRS, Section 2.4] [\[Talk Notes\]](#)

Left and right centers of algebras in monoidal categories

October 20, 2021

Speaker : Harshit Yadav (Rice)

Topic: [FFRS, Section 3.1] [\[Talk Notes\]](#)

Endofunctors and induction functors

November 3, 2021

Speaker : Anh Tuong Nguyen (UIUC)

Topic: [FFRS, Section 3.2, 3.3] [\[Talk Notes\]](#)

Endofunctors on categories of algebras, centres and endofunctors

November 17, 2021

Speaker : Chelsea Walton (Rice)

Topic: [FFRS, Section 3.4] [\[Talk Notes\]](#)

Ribbon subcategory of local modules

January 26, 2022

Speaker : Harshit Yadav (Rice)

Topic: [FFRS, brief overview of Section 4] [\[Talk Notes\]](#)
Local induction

February 9, 2022

Speaker : Hongdi Huang (Rice)

Topic: [FFRS, Sections 5.1, 5.2] [\[Talk Notes\]](#)
Braiding and left modules
Braiding and bimodules

February 23, 2022

Speaker : Hongdi Huang (Rice)

Topic: [FFRS, Section 5.3] [\[Talk Notes\]](#)
A ribbon equivalence between local modules and ambichiral bimodules

March 9, 2022

Speaker : Anh Tuong Nguyen (UIUC)

Topic: [FFRS, Sections 6.1, 6.2] [\[Talk Notes\]](#)
Product categories and the notion of trivialisability
The dual of a tensor category

March 23, 2022

Speaker : Anh Tuong Nguyen (UIUC)

Topic: [FFRS, Sections 6.3, 6.4] [\[Talk Notes\]](#)
The trivialising algebra T_Γ
Modularity implies trivialisability

April 6, 2022

Speaker : Harshit Yadav (Rice) [\[Talk Notes\]](#)

Topic: [FFRS, Section 7]
Correspondences of (ribbon, modular) tensor categories