Summary – TFA/SYM Meeting, Wednesday 08.05.19

1) Announcements (new people, guests etc.)
As usual http://sym.math.ku.dk/guests/ contains a list of current guests.

2) Upcoming events
-- 24-28/6, the big event SYM-10-Years takes place. All present and past staff are invited, so please sign up right away. During the conference week there will be lots of talks and social events – among others a Daily Gong-show followed by refreshments and the Thursday evening conference dinner.

-- July 8-12, Jesper Grodal and Anssi Lahtinen are organizing a small workshop on the homotopy theory of finite groups of Lie type.

-- August, 05-10/08 19 the YMC*A takes place. Registration has closed with around 120 signed up.

Please see http://sym.math.ku.dk/conferences/ for more information.

3) Seminars and their organization
Seminars are an important part of academia, and everybody, also PhD students, are expected to participate at the weekly seminar within their area (alg/top, OA, number theory).

If you want to suggest a speaker, please contact the seminar organizers:

-- Alg/Top seminar: please contact Thomas Wasserman or Marton Hablicsek

-- Operator Algebra: please contact Søren Eilers

-- Number theory seminar, please contact Fabien Pazuki

-- "What is..." seminar **NEW**. Every second Friday, with refreshments afterwards. Please contact Kevin Brix for details.

Suggestion to help grad students get more out of seminars: Grad students should think of organizing a "pre-talk" with seminar speakers e.g., 14-15, where they can get a background briefing by the speaker before the actual talk --- if there is interest please talk to the seminar organizers about how to organize this.

Misc seminar info: The seminar organizers are generally responsible for announcing guests in the MBS guest database, and they will know about which grants to charge. (After the announcement in MBS the administration will take care of hotel booking, office space, keys, etc.; Speakers are normally invited for a couple of days and they will typically have cheapest transport to/from Copenhagen, hotel and a honorarium paid.)

4) Teaching next year
Lars Halle and Henrik Holm will soon send out a mail link to a form for postdocs and PhDs to fill out. Here you can state your preferences with respect to what courses you would like to TA or teach, and you can state other special information (e.g. periods you will be away). Teaching assignments will be completed in June.

Course program for 20/21: The permanent staff is currently discussing how to improve the course offering. If you have suggestions for how to improve the course offering please contact Henrik Holm/Lars Halle (or other members of the permanent staff). In particular they are useful before MONDAY (May 13) where the permanent staff will discuss the course offering at the "institute day".
5) Final Follow-up Meeting with DNRF on June 11
At the next TFA/SYM meeting, June 6th, we will have to prepare the DNRF meeting which is Tuesday June 11, 9:30-12. Topic of the meeting this year: What makes a center successful? Further more some PhDs and postdocs are to give a short presentation.

Everyone is expect to attend. If you cannot make it please let Lone know.

6) Others

Monthly TFA-Meetings
Should we continue to have the monthly TFA-Meeting after the closure of the center? If you have an opinion on that Jesper would be happy to hear about it. And if yes, in which form should it continue? What can we be together about? It only makes sense to organize the meeting if they are relevant for people and they are willing to attend. Please provide feedback!

Mailing lists
To stay updated on the activities and information flow please check if you are on the relevant mailing lists. If you – for some reason – do not receive the relevant mails sent out, please send a mail to Lone informing her which list you need to be added to.

7) Preprints
Six new preprints by Bergh, Barthel (x2), Musat-Rørdam, Borys, Møller, and co-authors. See below for abstracts. Presentation by Clemens Borys.

Next meeting will be on Thursday, June 6. (Wednesday June 5 is a holiday.)

arXiv:1905.00872
Title: Functorial destackification and weak factorization of orbifolds
Authors: Daniel Bergh, David Rydh.
Categories: CPH-SYM-DNRF92, math.AG.
Abstract: Let X be a smooth and tame stack with finite inertia. We prove that there is a functorial sequence of blow-ups with smooth centers after which the stabilizers of X become abelian. Using this result, we can extend the destackification results of the first author to any smooth tame stack. We give applications to resolution of tame quotient singularities, prime-to-l alterations of singularities and weak factorization of Deligne-Mumford stacks. We also extend the abelianization result to infinite stabilizers in characteristic zero, generalizing earlier work of Reichstein-Youssin.

arXiv:1904.12841
Title: On stratification for spaces with Noetherian mod $p$ cohomology
Authors: Tobias Barthel, Natalia Castellana, Drew Heard, Gabriel Valenzuela.
Categories: math.AT (math.RT).
Abstract: Let $X$ be a topological space with Noetherian mod $p$ cohomology and let $C^*(X;\mathbb{Q})$ be the commutative ring spectrum of $\mathbb{Q}$-valued cochains on $X$. The goal of this paper is to exhibit conditions under which the category of module spectra on $C^*(X;\mathbf{Q})$ is stratified in the sense of Benson, Iyengar, Krause, providing a classification of all its localizing subcategories. We establish stratification in this sense for classifying spaces of a large class of topological groups including Kac--Moody groups as well as whenever $X$ admits an $H$-space structure. More generally, using Lannes' theory we prove that stratification for $X$ is equivalent to a condition that generalizes Chouinard's theorem for finite groups. In particular, this relates the generalized telescope conjecture in this setting to a question in unstable homotopy theory.

arXiv:1904.10062
Title: The Furstenberg Boundary of a Groupoid
Author: Clemens Borys
Categories: CPH-SYM-DNRF92, math.OA.
Abstract: We define the Furstenberg boundary of a locally compact Hausdorff étale groupoid,
generalising the Furstenberg boundary for discrete groups, by providing a construction of a groupoid-equivariant injective envelope.

arXiv:1903.10182
Title: Factorizable maps and traces on the universal free product of matrix algebras
Authors: Magdalena Musat, Mikael Rørdam
Categories: CPH-SYM-DNRF92, math.OA.
Abstract: We relate factorizable quantum channels on $M_n$, for $n \geq 2$, via their Choi matrix, to certain correlation matrices, which, in turn, are shown to be parametrized by traces on the free unital product $M_n * M_n$. Factorizable maps that admit a finite dimensional ancilla are parametrized by finite dimensional traces on $M_n * M_n$, and factorizable maps that approximately factor through finite dimensional C*-algebras are parametrized by traces in the closure of the finite dimensional ones. The latter set is shown to be equal to the set of hyperlinear traces on $M_n * M_n$. We finally show that each metrizable Choquet simplex is a face of the simplex of tracial states on $M_n * M_n$.

arXiv:1903.10003
Title: Monochromatic homotopy theory is asymptotically algebraic
Authors: Tobias Barthel, Tomer M. Schlank, Nathaniel Stapleton
Categories: math.AT (math.CT).
Abstract: In previous work, we used an $\infty$-categorical version of ultraproducts to show that, for a fixed height $n$, the symmetric monoidal $\infty$-categories of $E_{n,p}$-local spectra are asymptotically algebraic in the prime $p$. In this paper, we prove the analogous result for the symmetric monoidal $\infty$-categories of $K_{p}(n)$-local spectra, where $K_{p}(n)$ is Morava $K$-theory at height $n$ and the prime $p$. This requires $\infty$-categorical tools suitable for working with compactly generated symmetric monoidal $\infty$-categories with non-compact unit. The equivalences that we produce here are compatible with the equivalences for the $E_{n,p}$-local $\infty$-categories.

arXiv:1903.03818
Title: Euler characteristics and p-singular elements in finite groups
Author: Jesper M. Møller
Categories: math.GR.
Abstract: We use the Euler characteristic of the orbit category of a finite group to establish equivalences between theorems of Frobenius and K.S. Brown and between theorems of Steinberg and L. Solomon.