James Dolan

homomorphism
Burnside ring $\to \mathbb{C}$Rep ring

rank of ring versus dim of spectrum.

"Green ring"

generators: atomic G-sets

$$\mathbb{N}[A, B, \ldots] \,/\, \text{Ideal}$$

presentation for $\mathbb{C}\mathrm{Rep}[G]$ is the group ring of Fourier dual

Subgroups of $\mathbb{Z}/n$ are cyclic

$$\hat{a} \otimes \hat{b} = (a\wedge b)\widehat{a\vee b}$$

twisted multiplicat
Monoid ring twisted by 2-cocycle given by $(\cdot\wedge\cdot)$
[Is it nontrivial]?

Lars Gunnerson

business as independent teacher
influenced by japanese learning

① 24/8/19

McKay correspondence

$\mathbb{C}$-Vec base
theory of an object X: young diagrams

(1) add beliefs:

$$\boxminus \xrightarrow{\cong} \mathbb{C}$$

should give reps of ~~[illegible]~~ $SL(2)$

(2) add belief in an integ

$$\boxminus(X) \otimes \varphi \cong \mathbb{C}$$

should give rep $GL(2)$

(3) take (1) and add structure without adding properties (which would add points to the moduli space)

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In any com-ring
Idempotents form
a boolean algebra
i.e. $P(X)$

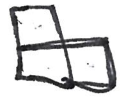
$$(a+b)(a+b) = a^2 + 2ab + b^2$$
$$= a + 2ab + b$$
$$(a \wedge b) := a + b - ab$$
$$(a+b-ab)(a+b-ab)$$
$$= a + 2ab + b$$
$$- ab - ab$$
$$(a+b-2ab)(a+b-2ab)$$
$$= a + 2ab + b$$
$$+ 4ab + \dots$$
$$= a + b - 2ab$$

Dress

bijection between
indecomposable idempotents
& cjg classes of
perfect subgroups.

Question how does
lack of perfect subgroups
relate to soluability
and/or Jordan Holder decomp.

12 : 1, 2, 3, 4, 6, 12



36 

1, 2, 3, 4, 6, 9, 12, 18,
36

Are Burnside
algebras
semi-simple?
Nilpotent elements?

Dress

G is soluable
iff 0, 1 are the
only idempotents
in A(G)
"
Burnside
ring

Question: are the
idempotents in A(G)
the power set of the
non-abelian
Jordan-Holder factors?

(Games Notes)

(3) 24/8/19

Two kinds of geometry

Kleinian geometry

vs.

affine algebraic geometry

In $A(\mathbb{Z}/p)$

$X \otimes X = pX$

(1) 25/8/19

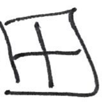
Given n-box young diagram D, can associate a rep of S_n (also $GL_q(n)$.) in many ways.

Functor

$\tilde{n}\mathrm{Set} \to \tilde{\mathrm{Set}}$

$S \mapsto$ framed D quotient of S

rows of D partition S

e.g. D: 

$\tilde{4}\mathrm{Set} \to \tilde{\mathrm{Set}}$

(unframed): D quotient $\{a,b,c,d\} \mapsto$ 3 partitions $\{(ab, cd), (ac, bd), (ad, bc)\}$

opposite edges of tetrahedron

framed: D-quotient " $\mapsto$ 3 partitions mapped to D 6 of these.

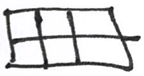
total order on the parts

give perm reps of 4!

oriented D-quotients

not sure exactly how to define these so far...

e.g.

D=  $\tilde{6}\mathrm{Set} \to \tilde{\mathrm{Set}}$

...... unframed partitions 10

framed D-quotients $\frac{6!}{3!\,3!} = 20$

oriented D-quotients 20