# Action operads comments to fix

### 1. Introduction

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### 2. ACTION OPERADS

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#### 3. Operads in the category of categories

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### 4. Monoidal structures and multicategories

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#### 5. Invertible objects

- Rewrite intro
- Decide on ELambda algebras or Lambda monoidal categories throughout
- Need 2-adjunction: this should follow from Thm 8.6 in the enriched\_sketches paper I saved
- include forward ref to where we use crefepi
- Move comment (QQQ)
- Get better Eckmann-Hilton ref
- Fix paragraph; make clear we are determining composition
- Explain M strategy, include forward refs
- New notation
- Where do we say this?
- Fix weakly invertible section

### 6. Invertibility and group actions

- Forward ref
- definition env
- missing ref
- little wording fixes
- change G to Lambda
- S vs Sigma for symmetric groups
- Think about free monoid lem again
- Fix triangle
- lots of notation issues (e, G, length bars)
- why splitting
- missing ref?
- splits by construction: hmm
- ref?
- for v, v' not delta of something
- why? comment
- minor wording

- inverses for morphisms under comp vs tensor
- missing ref?
- more G's (x2)
- another missing ref
- another G
- include corollary?
- forward refs
- not happy with last section
- practical?

#### 7. Computing automorphisms of the unit

- in the next two results
- 4.1.2 two boxes
- the above following square
- $\bullet$  insert =
- 4.1.3 check 2.3.10
- $\bullet$  check 4n or 2n
- mentioned Delta, I
- remove functor
- explain purpose
- improve proof 4.2.3
- fixed proof 4.3.2
- check commutative Square
- isomorphism symbol
- redo 4.4
- insert diagram
- bad line break at the beginning of 4.5
- $\bullet$  consistent text after 4.5.3
- move something to earlier
- make sure length and size notation is introduced earlier
- clarify this
- highlight that star means the inverse under tensor product for morphisms
- change prove to shows
- bad line break
- insert the proof from Ed's email
- put a short proof
- check the note
- change express to describe
- isomorphism symbol
- change make sure to ensures
- remove calculation
- change we want to do

#### 8. A FULL DESCRIPTION OF $L_n$

- bad line break
- remove exposition
- fix fancy G
- change G to lambda

- ullet isomorphism symbol
- tensor product given component wise
- $\bullet$  check reference
- $\bullet\,$  rewrite calculation
- check universal property
- $\bullet\,$  insert for a simple example

# 9. Examples

 $\bullet$  Actually read this section, fix anything

# Comments addressed

# 10. Invertible objects

- Include notation for  $\eta$  as the unit here
- $\bullet$  Change to equalizers
- Change to  $(LX)_{inv} = LX$
- Fix ()s
- Include triangle NO
- Uniform gp superscripts
- Remove actually
- Ref  $\eta$
- Replace with is, remove parts
- Remove proof
- Fix ab superscripts, same as gp
- q
- Under red line: move? make remark? delete some?
  - 11. Invertibility and group actions

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12. Computing automorphisms of the unit

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13. A FULL DESCRIPTION OF  $L_n$ 

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14. Examples

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