

OVERVIEW THH e TC SEMINAR

Recall A a ring (Associative, unital, comm. not req.)

$$\mathbb{H}M_* (A) = M_* (A \leftarrow A \otimes_2 A \leftarrow A \otimes_2 A \otimes_2 A \leftarrow \dots)$$

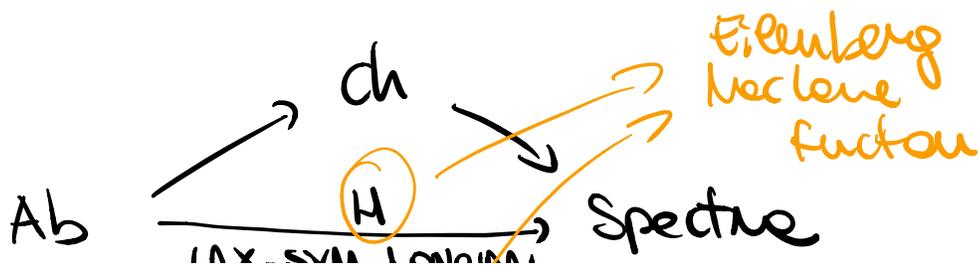
$$a(b+c) \leftarrow a \otimes b$$

$$a \otimes (b+c) \leftarrow a \otimes b \otimes c$$

$$- a \otimes b \otimes c + c \otimes a \otimes b$$

THH replaces $\otimes_{\mathbb{Z}}$ with $\otimes_{\mathbb{S}} = \wedge$

ALGEBRA	TOPOLOGY
<p>Set</p> <p>$F \left(\uparrow \right) u$</p> <p>Ab</p> <p>$\otimes$ on Ab</p> <p>\mathbb{Z} is the \otimes-wit</p> <p>Rings = Monoids (Ab, \otimes)</p>	<p>Spaces</p> <p>$\mathbb{Z}_+ \left(\uparrow \right) \Omega^\infty$</p> <p>Spectra</p> <p>$\wedge$ on Spectra</p> <p>\mathbb{S} the \wedge-wit</p> <p>Ring Spectra = = Monoids (Spectra, \wedge)</p>



$$K(\ell/\mathbb{F}_q) / (\mathbb{Z}^m)^\wedge \cong W_{+m-1}(\ell) / V^m W_{+1}(\ell)$$

$$K_{\text{even}}(\quad)^\wedge = 0 \quad [\text{Messelholt - Madsen}]$$

- A commutative smooth k -algebra

$$\pi_*(\text{THH}(A)^{C_p^{p-1}}) \cong W.\Omega_A^*$$

PRO-ABELIAN GROUPS
DE RHAM WITT COMPLEX

[Messelholt]

- BUS [BLATT-MANEV-SMOLZE]

$$R\Gamma_{\text{crys}}(A/W(h)) \cong R_{\text{SYN}}\Gamma(A; \pi_0 TC(-)_\mathbb{Z}_p^\wedge)$$

TALKS

① Background on ω -categories	OCT 16
② Ring Spectra	OCT 23
③ Def of THH(A) MARCO	OCT 30
④ THH(\mathbb{F}_p) JOHN	NOV 6
⑤ CYCLOTOMIC spectra od TC	NOV 13
⑥ TC(\mathbb{F}_p)	NOV 20
⑦ od ⑧ Applications	
