FUN WITH FINITE SPECTRA

ROBERT BURKLUND

Time and place:
Mon, 14-16: 4-0-05, Biocenter (lecture)
Wed, 10-12: A105, HCØ (exercise session)
Wed, 14-16: Lille UP1, DIKU (lecture)

Goal:
By the end of the course participants will know enough methods and techniques to compute the first 32 stable stems.

Topics:
Brown's finiteness theorem, stable categories, triangulated categories, derivators, t-structures, weight structures, Toda brackets, filtered spectra, spectral sequences, cellular filtrations and the Atiyah–Hirzebruch sseq, cohomology operations, Adams sseq, comodules and ext groups, stacks, May sseq, synthetic spectra, power operations.

Outline:

	Date	Topic	References
Lec 1	24/4	Brown's finiteness theorem, stable categories	[Brown], [HA Ch 1.1]
Ex 1	26/4	review and background	[HTT], [HA]
Lec 2	26/4	triangulated cateogries, Toda brackets	[HA Ch 1.1], [Toda]
Lec 3	1/5	t-structures, spectral sequences	[HA Ch 1.2]
Ex 2	3/5	Toda brackets, cell structures	
Lec 4	3/5	Computing $\pi_*\mathbb{S}$ (AH sseq), cell diagrams	
Lec 5	8/5	filtered spectra, examples of sseqs	
Ex 3	10/5		
Lec 6	10/5	synthetic spectra	

Lec 7	15/5	cohomology operations, comodules	
Ex 4	17/5		
Lec 8	17/5		
Lec 9	22/5	computing ext groups, stacks	
Ex 5	24/5		
Lec 10	24/5	May sseq	[MilnorMoore]
Lec 11	29/5	Computations	
Ex 6	31/5		
Lec 12	31/5	Computations	

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