

Foundations of unstable homotopy theory

Mike Hill Peter Lee

Wednesdays at 3pm, Room 2-131, Summer 2005

Scheduled talks/tentative outlines

Peter Lee, July 13. Topological background: Hilton-Milnor theorem, Whitehead products, Samelson products, and homotopy operations.

John Francis, July 20. James construction, 2-local EHP sequence.

Mark Behrens, July 27. Atiyah-Hirzebruch-Whitehead spectral sequence, $\text{Im } J$, and the EHP sequence: computations at 2.

Mike Hill, August 3. Odd primary case, questions of multiplications, Lambda algebra, and applications.

TBD, August 10. Unstable Adams Spectral Sequences à la Massey-Peterson, Haynes, etc.

TBD. Splittings and exponents in unstable homotopy. Bockstein spectral sequences.

References

- [Jam55] I. M. James. Reduced product spaces. *Ann. of Math. (2)*, 62:170–197, 1955.
- [SSS89] S. M. Salamon, B. Steer, and W. A. Sutherland, editors. *Advances in homotopy theory*, volume 139 of *London Mathematical Society Lecture Note Series*, Cambridge, 1989. Cambridge University Press.
- [Tod62] Hirosi Toda. *Composition methods in homotopy groups of spheres*. Annals of Mathematics Studies, No. 49. Princeton University Press, Princeton, N.J., 1962.
- [Whi78] George W. Whitehead. *Elements of homotopy theory*, volume 61 of *Graduate Texts in Mathematics*. Springer-Verlag, New York, 1978.