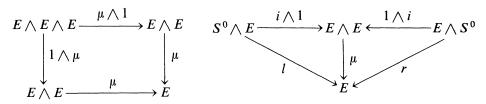
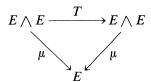
RING SPECTRA WHICH ARE THOM COMPLEXES

MARK MAHOWALD

For our purposes a ring spectrum E is a spectrum with a map $i: E \land E \rightarrow E$ and a unit $i: S^0 \rightarrow E$ such that the following diagrams commute up to homotopy:



The ring spectrum is abelian if



commutes up to homotopy where T is the map that exchanges factors.

Let L be a space and let ξ be a fibration over L classified by a map $f: L \to BF$ (the classifying space of stable spherical fibrations). We can form the Thom spectrum T(f) of f as a suspension spectrum by letting $(T(f))_n$ be the Thom complex of $L^n \to BF_n$ where L^n is the n-skeleton of L. This makes $T(f) = \{(T(f))_n\}$ into a suspension spectrum.

Spectra which arise in this fashion have a unit which is the inclusion of the fiber on the Thom class.

Natural examples of maps $f: L \to BF$ give a plethora of interesting spectra: among them are $K(Z_2, 0)$, K(Z, 0), the Brown-Gitler spectrum, and a spectrum for which the secondary operation of Adams $\varphi_{j,j}$ [1] is defined and non-zero on the Thom class.

Frequently, the Thom spectra which we obtain in this manner are commutative ring spectra. A useful feature of these Thom spectra is that they admit particularly nice resolutions. Consequently, these spectra give rise to

Received February 3, 1979. Revision received February 27, 1979. The author would like to thank the referee for the numerous recommendations which helped to clarify this paper and also for the alternate proof of 2.8. The research is supported in part by NSF Grant MCS76-07051.