Meeting: 1005, Newark, Delaware, SS 1A, Special Session on Homotopy Theory (in Honor of Donald M. Davis's and Martin Bendersky's 60th Birthdays)

1005-55-145 **Gregory Arone** and **Kathryn Lesh*** (leshk@union.edu), Department of Mathematics, Union College, Schenectady, NY 12308. *A curious filtration of spectra arising from Segal's machine.*

Given a special Γ-category $\mathcal{C}$ satisfying some mild hypotheses, we construct a sequence of spectra interpolating between the associated spectrum and the Eilenberg-Maclane spectrum HZ. Examples of categories to which our construction applies are: the category of finite sets, the category of vector spaces, and the category of free modules over a reasonable ring. In the case of finite sets, our construction recovers the filtration of HZ by symmetric powers of the sphere spectrum. In the case of complex vector spaces, we obtain an apparently new sequence of spectra interpolating between bu and HZ. There is a far-reaching formal similarity between our filtration of bu and the symmetric power filtration. For instance, the nth sub-quotient of our filtration is contractible unless n is a power of a prime, and in v_k-periodic homotopy the filtration has only $k+2$ non-trivial terms. There is an intriguing relationship between our filtration of bu and Weiss' orthogonal calculus, analogous to the not yet completely understood relationship between the symmetric power filtration and the Goodwillie calculus of homotopy functors. We conjecture that there is an analogue of the Whitehead conjecture that holds in the unitary case. (Received February 06, 2005)