1114-20-284 **David J Hemmer*** (dhemmer@math.buffalo.edu), 244 Math Building, Buffalo, NY 14260, and **Frederick R Cohen** and **Daniel K Nakano**. *The Complexity of the Lie Module.*

The complexity of a module is an important homological invariant that measures the polynomial rate of growth of its minimal projective resolution. For the symmetric group Σ_n, the Lie module $\mathsf{Lie}(n)$ has attracted a great deal of interest in recent years.

We prove here that the complexity of $\mathsf{Lie}(n)$ in characteristic p is t where p^t is the largest power of p dividing n, thus proving a conjecture of Erdmann, Lim and Tan. The proof uses work of Arone and Kankaanrinta which describes the homology $\mathrm{H}_\bullet(\Sigma_n, \mathsf{Lie}(n))$ and earlier work of Hemmer and Nakano on complexity for modules over Σ_n that involves restriction to Young subgroups. (Received August 31, 2015)