

**Meeting:** 998, Houston, Texas, SS 2A, Special Session on Representations of Algebras

998-16-342            **Nancy E Heinschel**, National Security Agency, Fort Meade, MD 20755, and **Birge K Huisgen-Zimmermann\*** ([birge@math.ucsb.edu](mailto:birge@math.ucsb.edu)), Department of Mathematics, University of California, Santa Barbara, CA 93106. *Stacks of algebras and their homology.*

We will sketch a stacking technique for tailoring algebras to measure, so as to exhibit homological phenomena of interest towards the second finitistic dimension conjecture.

Producing a counterexample to this conjecture would amount to finding a finite dimensional algebra  $\Lambda$  such that the function  $\mathbb{N} \rightarrow \mathbb{N}$ , assigning to each  $n$  the maximum of the finite projective dimensions attained on the  $n$ -generated  $\Lambda$ -modules, takes infinitely many jumps. However, mechanisms triggering such jumps have been unknown so far. As an application of our stacking technique, we display a class of examples with finitely many jumps (of arbitrary size) as follows: For any non-decreasing function  $f : \mathbb{N} \rightarrow \mathbb{N}_{\geq 2}$  which takes only finitely many values, we construct a connected finite dimensional algebra whose  $n$ -generated finitistic dimension equals  $f(n)$  for all  $n$ . (Received March 02, 2004)