1030-13-215 **Luchezar L. Avramov** (`avramov@math.unl.edu`), 203 Avery Hall, University of Nebraska, Lincoln, NE 68588, and **W. Frank Moore*** (`fmoore@math.unl.edu`), 203 Avery Hall, University of Nebraska, Lincoln, NE 68588. *Cohomology of connected sums of artinian Gorenstein rings.*

Let S and T be artinian Gorenstein local rings with common residue field k. The connected sum $S\#T$ is the quotient of the fiber product $S \times_k T$ by the difference of the two socle elements; it is Gorenstein. We describe the Koszul homology algebra $H(K^{S\#T}))$ in terms of the Koszul homology algebras of S and T. In addition, we show that the quotient map $S \times_k T \longrightarrow S\#T$ is a Golod homomorphism. This provides information on the structure of the Ext algebra of $S\#T$, and hence a formula for the Poincaré series of k over $S\#T$. (Received August 03, 2007)