1062-13-63 **Ragnar-Olaf Buchweitz*** (ragnar@utsc.utoronto.ca), Dept. of Computer & Mathematical Sciences, University of Toronto Scarborough, 1265 Military Trail, Toronto, Ontario M1E 1C4, Canada, and **Hubert Flenner**, Faculty of Mathematics, Ruhr-Universität Bochum, Germany.
Universal Annihilators. Preliminary report.

Let R be a complete local noetherian ring of dimension d. What is the universal annihilator of $Ext_R^{d+1}(M,N)$ for finitely generated R–modules M, N?

If $d = 1$, a result of Wang (1994) shows this annihilator to contain the conductor ideal. In general, for R Gorenstein and containing a coefficient field, we show that this annihilator contains the annihilator of the cokernel of a natural map from the d^{th} Hochschild homology of R to the ring, which in turn in the reduced case contains the annihilator of the cokernel of the characteristic class, the natural linear map from the module of differential forms $\Omega^d_{R/K}$ to the dualizing module $\omega_{R/K}$. This annihilator contains any Noether different and so also the Jacobian ideal thereby strengthening Wang's earlier results.

These results provide in particular a lower bound for the universal annihilator of the stable category of maximal Cohen-Macaulay modules over such a ring, a quantity of interest in string theory. (Received July 23, 2010)