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Sean Sather-Wagstaff* (Sean.Sather-Wagstaff@ndsu.edu). *Semidualizing modules and Bass numbers*. Preliminary report.

Huneke has asked whether a local Cohen-Macaulay ring R whose Bass numbers are eventually constant must be Gorenstein. We will show how the existence of a nontrivial semidualizing R -module implies that the Bass numbers of R must grow at least linearly; moreover, the existence of a chain of $d + 1$ semidualizing modules yield a degree- d polynomial lower bound for the Bass numbers of R . Furthermore, we show how information about the first few Bass numbers of R yields information about the structure of the class of semidualizing R -modules. (Received January 30, 2009)