1007-13-220   **Ragnar-Olaf Buchweitz** and **Graham J Leuschke***, Mathematics Department, 215 Carnegie Hall, Syracuse University, Syracuse, NY 13244. *Factorizations of the classical adjoint and maximal Cohen–Macaulay modules over the generic determinant.* Preliminary report.

In "Can one factor the classical adjoint of a generic matrix?", George M. Bergman asks essentially what are the possible Maximal Cohen-Macaulay (MCM) modules with few generators over the hypersurface ring defined by the generic determinant, equivalently, what are the matrix factorizations of that determinant of small size. More specifically, he inquires about possible extensions of MCMs that have the cokernel of the adjoint matrix as their middle term. He shows, using a recent result by De Concini and Reichstein about maps between Grassmannians, that there are no such extensions in characteristic zero for generic matrices of odd size and that for even size only extensions where one of the ends is of rank one could be possible. We show that the latter case indeed occurs over any ring and classify all such extensions. Along the way, we also classify all extensions of rank one MCM modules (there are only two nonfree such), and show that the MCM-representation theory for the generic determinant is quite "wild", even when restricted to rank-two modules. (Received February 22, 2005)

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