1073-16-103 **Andrew Conner*** (`connerab@wfu.edu`) and **Brad Shelton**. *$\mathcal{K}_2$ factors of Koszul algebras and the $\mathcal{K}_2$ property for face rings.*

Relatively little seems to be known about the structure of a face ring's Yoneda Ext-algebra beyond Fröberg's theorem that all quadratic face rings are Koszul algebras. Cassidy and Shelton recently introduced the notion of $\mathcal{K}_2$ algebra as an analog of the Koszul property for graded algebras with defining relations of more than one homogeneous degree. The study of $\mathcal{K}_2$ algebras, continued in this paper, removes the major obstacle of homological purity from proving Koszul-type structural results for non-quadratic face rings. We extend a change-of-rings theorem for Koszul algebras due to Backelin and Fröberg and use it to show some important families of non-quadratic face rings are $\mathcal{K}_2$. (Received July 28, 2011)

1