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*Integer-Valued Polynomials over Matrix Rings*

Bhargava's  $p$ -orderings and  $p$ -sequences have been helpful tools in the study of integer-valued polynomials over subsets of  $\mathbb{Z}$  and arbitrary Dedekind domains, and similar useful definitions exist of  $\nu$ -orderings and  $\nu$ -sequences in the case of certain noncommutative rings. In a 2015 paper by Evrard and Johnson, these  $\nu$ -sequences are used to construct a regular  $p$ -local basis for the rational integer-valued polynomials over the ring of  $2 \times 2$  integer matrices  $M_2(\mathbb{Z})$ . In this talk we will show how the construction used there extends nicely to  $M_n(\mathbb{Z})$  where  $n$  is prime, as well as discuss some interesting issues which arise in the case where  $n$  is composite.