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Gaohua Tang and **Yiqiang Zhou*** (zhou@mun.ca), Department of Mathematics and Statistics, Memorial University of Newfoundland, St. John's, NL A1C 5S7, Canada. *A Class of Formal Matrix Rings*. Preliminary report.

Given a ring R , our concern is about the formal matrix ring $\mathbb{M}_n(R; s)$ over R defined by a central element s of R . When $s = 1$, $\mathbb{M}_n(R; s)$ is just the matrix ring $\mathbb{M}_n(R)$, but generally $\mathbb{M}_n(R; s)$ can be significantly different from $\mathbb{M}_n(R)$. In this talk, we will present some basic properties of the ring $\mathbb{M}_n(R; s)$, address the isomorphism problem between these rings, and discuss extending some known results from a matrix ring to the formal matrix ring $\mathbb{M}_n(R; s)$. (Received August 31, 2012)