1048-12-88   **Erich Kaltofen** (`kaltofen@math.ncsu.edu`), Dept. Mathematics, North Carolina State
University, Raleigh, NC 27695-8205, and **George Yuhasz*** (`gyuhasz@math.ncsu.edu`), Dept.
Mathematics, North Carolina State University, Raleigh, NC 27695-8205. *A Fraction Free Matrix
Berlekamp/Massey Algorithm.*

We describe a fraction free version of the Matrix Berlekamp/Massey algorithm. The algorithm computes a minimal matrix
generator of linearly generated square matrix sequences over an integral domain. The algorithm performs all operations
in the integral domain, so all divisions performed are exact. For scalar sequences, the matrix algorithm specializes to a
more efficient algorithm than the algorithm currently in the literature. The proof of integrality of the matrix algorithm
gives a new proof of integrality for the scalar specialization. (Received January 30, 2009)