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Xiang-dong Hou* (xhou@cas.usf.edu), 4202 East Fowler Ave., Tampa, FL 33620, and **S. R. Lopez-Permouth** and **B. R. Parra-Avila**. *Rational power series and sequential codes*.

This talk consists of two parts. First we prove several results about rational power series. Let R be a commutative ring. A power series $f \in R[[x]]$ with (eventually) periodic coefficients is rational. We determine the ring R such that the converse holds. We also generalize certain results from $R[[x]]$ to $R[[x_1, \dots, x_n]]$ with commuting variables. For the second part, we introduce the notion of *sequential* code which is a natural generalization of cyclic and even constacyclic codes. We discuss the properties of sequential codes, their constructions and their relations to rational power series. Examples show that sequential codes can achieve better minimal distance in certain parameters. This is a joint work with Sergio López-Permouth and Benigno Parra-Avila of the Ohio University. (Received August 25, 2008)