1067-11-1987   **Alan Koch*** (`akoch@agnesscott.edu`), 141 E. College Ave., Decatur, GA 30030. *A connection between Hopf orders and Laurent series.* Preliminary report.

Let R be a complete discrete valuation ring of mixed characteristic $(0, p)$. Let K be its field of fractions and k its residue field. Suppose H is an R-Hopf order in KC_{p^n}, where C_{p^n} is a cyclic group of order p^n. We show that H corresponds to a sequence $\{f_1, f_2, \ldots, f_n\} \subset W_n((u))$, where $W_n((u))$ is the ring of Laurent series with coefficients in the truncated Witt vector ring $W_n(k)$. Conversely, given a sequence $\{f_1, f_2, \ldots, f_n\} \subset W_n((u))$ satisfying certain properties one can find an R-Hopf order in KC_{p^n}. Using Breuil-Kisin modules we establish this correspondence and give examples for small n. (Received September 22, 2010)