

1106-11-1679

**Karl Dilcher\*** ([dilcher@mathstat.dal.ca](mailto:dilcher@mathstat.dal.ca)), Department of Mathematics & Statistics, Dalhousie University, Halifax, NS B3H 4R2, Canada, and **Larry Ericksen**. *Generalized Stern polynomials, hyperbinary expansions, and continued fractions*. Preliminary report.

We define a generalization of the Stern polynomials that were previously introduced by Dilcher and Stolarsky. These generalized polynomials characterize all hyperbinary expansions of a given positive integer. We then define two interrelated subsequences which can be seen as extensions or analogues of the Fibonacci numbers, and as limiting cases we obtain two classes of analytic functions. As an application we obtain evaluations of certain finite and infinite continued fractions whose partial quotients are doubly exponential, thus extending previous work related to Stern polynomials. (Received September 14, 2014)