1070-11-86 **Robert L. Benedetto*** (rlb@math.amherst.edu). *Some Open Problems in Non-archimedean Dynamics.*

Let K be an algebraically closed field that is complete with respect to a non-archimedean absolute value $|\cdot|_v$. Given a rational function $f(z) \in K(z)$ of degree at least two, denote by f^n the composition of f with itself n times, and consider the action of f^n both on the classical projective line and on the Berkovich projective line over K.

In the past fifteen years, much has been proven about such non-archimedean dynamical systems, including a classification of dynamics on the Fatou set of f and the existence of an f-invariant measure on the (Berkovich space) Julia set of f. However, many questions remain unanswered. In this talk, we will give a brief background on known results in the field and present a number of open questions. (Received January 31, 2011)