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Liang-Chung Hsia* (hsia@math.ncu.edu.tw), Department of Mathematics, National Central University, No.300, Jhongda Rd., Jhongli City, Taoyuan County, 32001, Taiwan. *On dynamical zeta functions for polynomial maps over p -adic fields*. Preliminary report.

In the study of dynamical systems, the set of periodic points carry important information of the dynamics. In analgous to the Hasse-Weil zeta function in number theory, a zeta function was proposed by Artin and Mazur to count the set of isolated periodic points of the dynamics arizing from diffeomorphisms of compact manifolds.

The Artin-Mazur zeta function is the function that we want consider for dynamics over p -adic fields. In this talk, we'll give a definition for zeta function of dynamics over p -adic field. Some of its properties will be discussed and especially, we will be concerned with whether or not it is a rational function. Zeta functions for a family of polynomail maps over a p -adic field will be presented. (Received September 13, 2009)