1127-37-381 **Zhiqiang Li*** (lizq@math.stonybrook.edu). *Prime orbit theorems and rational maps.*

Periodic orbits play an important role in the study of dynamical systems. In resemblance to the classical Prime Number Theorem in number theory and its relation to the Riemann Hypothesis, it is a natural problem to investigate precise asymptotes for the number of (primitive) periodic orbits as well as the error terms. Such results, known as Prime Orbit Theorems, have been established in many dynamical systems thanks to the works of W. Parry, M. Pollicott, V. Baladi, D. Dolgopyat, C. Liverani, L. Stoyanov, G. A. Margulis, A. Avila, S. Gouëzel, J. C. Yoccoz, M. Tsujii, and many others.

In this talk, we are going to introduce a brief history of such results, focusing mainly on the works of F. Naud, H. Oh, and D. Winter on hyperbolic rational maps. We are going to discuss the main ideas used to obtain such results. If time permits, we are going to discuss how to extend such results to a class of non-hyperbolic rational maps known as (rational) expanding Thurston maps. This is a joint work with T. Zheng. (Received February 07, 2017)