1163-37-353 **Wayne Peng*** (junwen.wayne.peng@gmail.com), 88 Surrey Hill Way, Rochester, NY 14623, **Thomas Tucker** (thomas.tucker@rochester.edu), Rochester, NY 14627, **Dang-Khoa Nguyen**, Calgary, AB T2N 4T4 , Canada, and **Fedor Pakovich** (pakovich@math.bgu.ac.il), Beer Sheva, Israel. *Toward dynamical isogeny theorem.* Preliminary report.

Let E be an elliptic curve and p be a prime. The Tate module $T_p(E)$ is the inverse limit being taken with respect to the natural maps

$$E[p^{n+1}] \xrightarrow[[p}]{} E[p^n]$$

where $E[p^n]$ is the p^n-torsion subgroup of E and $[p]$ is an isogeny multiplication by m. The Tate's isogeny theorem then says the natural map

$$\mathrm{Hom}_K(E_1, E_2) \otimes \mathbb{Z}_p \to \mathrm{H0m}_K(T_p(E_1), T_p(E_2))$$

is an isomorphism if K is a finite field or a number field.

The natural analogy of the Tate module for a dynamical system is a dynamical trees. However the isogeny for dynamical systems is missing. In this talk we are going to present a possible way to define the dynamical isogeny and formulate the dynamical isogeny conjecture. (Received September 03, 2020)