

**Speaker:** Laura DeMarco

**Title:** Rationality of canonical height

**Abstract:** Suppose  $E$  is an elliptic curve defined over a function field. It is well known that the Neron-Tate canonical height on  $E$  takes only rational values; moreover, the Neron local heights are computed as intersection numbers and will be rational at all (local) points of  $E$ . I will present a dynamical proof of this fact, by studying the canonical heights for morphisms  $f : P^1 \rightarrow P^1$  of degree  $> 1$ . It turns out that, by contrast, the local canonical height will take irrational values for typical maps  $f$ . In joint work with Dragos Ghioca, we analyze the case of degree 2 maps and apply our results to study the so-called Dynamical Mordell-Lang conjecture.