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# DIVISIBILITY OF L-POLYNOMIALS FOR A FAMILY OF ARTIN-SCHREIER CURVES

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## Abstract

In this talk we consider the curves  $C_k^{(p,a)} : y^p - y = x^{p^k+1} + ax$  defined over  $\mathbb{F}_p$  and give a positive answer to a conjecture about a divisibility condition on  $L$ -polynomials of the curves  $C_k^{(p,a)}$ . Our proof involves finding an exact formula for the number of  $\mathbb{F}_{p^n}$ -rational points on  $C_k^{(p,a)}$  for all  $n$ , and uses a result we proved elsewhere about the number of rational points on supersingular curves.

**Date :** Friday, March 18, 2022

**Time:** 17:00

**Place:** Boğaziçi University, South Campus & Zoom