

SUPERSINGULAR ELLIPTIC CURVES ON \mathbb{Z}_p EXTENSIONS

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ABSTRACT. Let E be an elliptic curve defined over the rationals and p a prime where E has supersingular reduction. Elkies has shown that there are infinitely such primes for every elliptic curve E . We will explore local and global results and questions about the structure of points of such curves over \mathbb{Z}_p extensions.