

PREVIOUSLY...

- ELLIPTIC CURVES OVER ARBITRARY FIELDS
- ELLIPTIC CURVES OVER FINITE FIELDS
- ELLIPTIC CURVES OVER \mathbb{C}

TODAY: ELLIPTIC CURVES OVER LOCAL FIELDS

Recall: $\mathbb{Z}_p = \varprojlim \mathbb{Z}/p^n\mathbb{Z} = \left\{ (a_1, a_2, \dots, a_n, \dots) : \begin{array}{l} a_n \in \mathbb{Z}/p^n\mathbb{Z} \\ a_{n+1} \equiv a_n \pmod{p^n} \end{array} \right\}$

$\mathbb{Q}_p = \left(\begin{array}{l} \text{field of} \\ \text{fractions} \\ \text{of } \mathbb{Z}_p \end{array} = \mathbb{Z}_p \left[\frac{1}{p} \right] \right)$ an example of a local f

