

Mike

$L(K(2)) \cong E_{O_2}$ at prime 2, 3

at 2 : do do $K(2)$ local, of this
reduce mod a power of p ,

$\frac{\quad}{\text{invert } v_2}$

- $v_2 = 0$: supersingular ell. curves
- v_2^{-1} : non-singular i.e. really an elliptic curve

\Rightarrow $K(2)$ -localization is the same as completion at supersingular curve

at $p=2$ there is only one supersing

$$y^2 + y = x^3$$

Aut of that (over \mathbb{F}_4) is 24
= binary tetrahedral group.

Silverman

The stack reduced mod p & v_1 is equivalent to the stack

of $\bullet \curvearrowright_{24}$

Toy example : $\mathbb{Z}[b, c] \quad x^2 + bx + c$

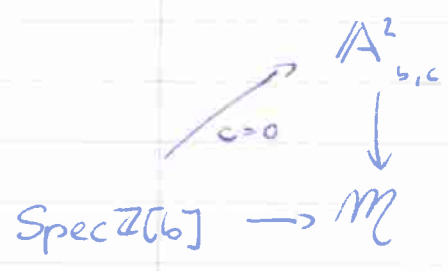
$$\mathbb{Z}[b, c] \cong \mathbb{Z}[b, c][r] [(b^2 - 4c)^{-1}]$$

$x \mapsto x+r \rightsquigarrow$ {maybe?}

$$x^2 + (b+2r)x + (r^2 + br + c)$$

$b \mapsto b$	$b \mapsto b+2r$
$c \mapsto c$	$c \mapsto c+br+r^2$

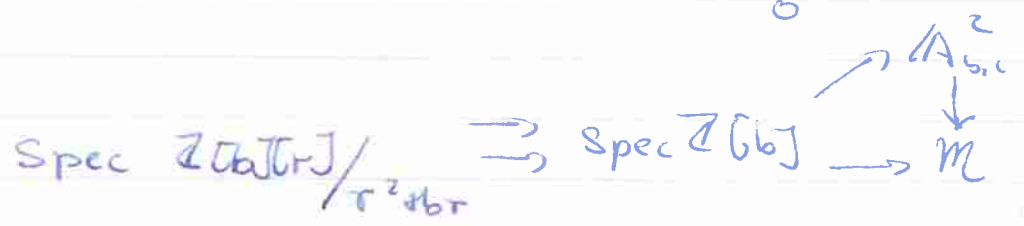
this defines a stack \mathcal{M}
 covering



define

$$x^2 + bx$$

$$x^2 + (b+2x) + \underbrace{(r^2 + br)}_0$$



$$\cong \mathbb{Z}[b^{\pm 1}] \curvearrowright \mathbb{Z}/2$$

Why is $L_{K(2)}$ a completion?

What $L_{K(2)}$ tries to be is

$$L_{K(2)}(X) \dashrightarrow$$

$$\varprojlim_{n_1, n_2} v_2^{-1} X \wedge M(p^{n_1}, v^{n_2})$$

(telescope conjecture) true for Ker