

Motivic cohomology of semistable varieties (pt with D. Gregory)

Bloch-Esnault type.

X/k with smooth proper & perfect

X_n/k_n X_n $Z_{X_n}(i)$

$$\left(\frac{r < p}{p > \dim + 6} \right) \hookrightarrow \bigoplus_{i=0}^r H_i(X_n, Z_{X_n}(i))_{\mathbb{Q}} \\ \cong H_0(X)_{\mathbb{Q}} \text{ continuous K-theory}$$

a) Define $Z_{X_n}(i)$ in étale/étale cohomology

$$H^r(X_n, Z_{X_n}(i)) \rightarrow Z_{X_n}(i) \rightarrow Z_{X_n}(i-1)$$

$$p^r \partial_X - 1 \rightarrow p^{r-1} \partial_X - 1 \rightarrow \dots \rightarrow p \partial_X - 1 \rightarrow 1$$

$$H_p \partial_X - 1 \rightarrow H_p \partial_X^* - 1 \rightarrow H_{p-1} \partial_X^* - 1$$

Stable analog

$r = \chi_{\text{mesure}}$

X / with proper stable scheme
 $Y \subset X$ $\pi_X \circ \pi_Y = \pi_Y$
 $Y \rightarrow X$

Define $\pi_{X,Y}^{(r)}$ finite correspondance
 or replaced by finite log corresp.

$(Y, M_Y) / (S, M_S, L)$

- c) stable of
- a) $\mathbb{Z}_X$ is
 - b) rationally
 - c) finite project

$(Y^{\text{fin}} = Y^{\text{un}})$

§1 Finite log correspondance
 (Z, M_Z) log scheme $Z^{\text{fin}} = \{z \in Z, \pi_z = 0\}$

2.1 X, Y log schemes

$z \in \text{Cor}(X, Y)$ finite corresp.

is log corresp of $z / \pi^{\text{fin}} \in X^{\text{fin}} \times Y^{\text{fin}}$ contained in $X \times Y$

$\text{Cor}(X, Y)^{\text{fin}}$
 $f: (X, M_X) \rightarrow (Y, M_Y)$
 $\Gamma_f \subset X \times Y$

ogm. If z is a finite log corresp

$v \in \text{Cor}(X, Y)^{\text{fin}}$, $w \in \text{Cor}(X, Y)^{\text{fin}}$,
 $w \circ v \in \text{Cor}(X, Y)^{\text{fin}}$

Def $\text{Sym state } \text{Cor}/h$ object = $\text{Symstate}/h$
 $\text{Mark}(Y_1, Y_2) = \text{Cor}(Y_1, Y_2)$

Def A presheaf with
 transfer: $\text{Symstate } \text{Cor} \rightarrow \text{AC}$
 $Y \quad Z, (Y)^*$ $\text{Symstate} \rightarrow \text{AC}$
 $(X, M_X) \rightarrow \text{Cor}(X, Y)^*$

$(A_n, \mathcal{P}_n)$ log scheme with log structure
 ass to NCD $\gamma_n = \{ \gamma_n(A_n, A_n(0) \rightarrow A_n(1) \}$

$$\mathcal{P}_n(A_n)^* = \mathcal{P}_n(A_n, \gamma_n)^* \quad (\Sigma_n = \text{map of form } (A_n, \mathcal{P}_n))$$

Def $\mathcal{P}_{\log}(n)$ of weight n $(\mathcal{P}_n(A_n)^* [E_n])$