$X/\mathbb{Q}$ smooth variety.

Motivic coho of X (bigraded family of rational vector spaces)

$$H^i_\mu(X, j) = \left(K_{2j-i}(X) \otimes \mathbb{Q}\right)^{(j)} \qquad \mathcal{X}/\operatorname{spec}\mathbb{Z}$$

Superscript (j) denotes the generalised simultaneous eigenspace of all Adams operators ψ^k, $k \geq 1$, belonging to the eigenvalues k^j.

$$X = \operatorname{Spec} \mathbb{Q}_S\left[\tfrac{1}{\ell}\right]$$

$K_*(X)$: Quillen K-groups.

p. 175 CUP Book.

$\mathbb{Q}(n)$

$\mathbb{Z}(n)$, $\mathbb{Z}_\ell(n)$

$$X \hookrightarrow \mathcal{X}$$

- Understand Ш$_{BK}$ and Ш$_{PT}$ for $\begin{cases}\text{Tate motive}^2 \\ \text{ell. curves}\end{cases}$

- For the Tamagawa number conjecture, understand how L-fns come in. (L-fn for E-C & Riemann-zeta fn)

Just say what TNC is. (B-K ……)

Justin:

- Understand how L-fns side change for isogeny } Greg Martin
- Understand how TNC is invariant under motives

M
M'
M/M'
$T_\ell E$
$T_\ell E'$

Broad picture Sketch. Via K-theory + mot. coho.
(Regulators)

Stanford Lectures

$T = \mathbb{Z}_\ell(n)$ $\qquad$ $T' : m\mathbb{Z}_\ell(n)$

TNC (Geraly)

"Bloch-Kato Conjecture is invariant under isogeny"

(Original article of B-K).

L-fns for ell. curves for CM.

Guido Kings $\longrightarrow$ reln. with Iwasawa theory

<u>MathSciNet</u>

$\rightarrow$ Motives coming from (CM) ell. curves

$\rightarrow$ Motives — " — ab. varieties

Also look at Otmar Venjakob.

Diamond? L. Guo — Motives coming from modular forms.
Kato

<u>Project</u>: Known (B-K) that B-K conj. is invariant under isogeny.

One component of B-K $\longrightarrow$ K-theory.

Q: What does this "invariance under isogeny" translate to when viewed from the K-theory optic?

K. 2 fn.
Ell. curves

$A(\mathbb{Q}_p)$; $A(\mathbb{Q})$ + regulator maps

Motivic cohomology ⇝ {part of} K-theory

Isogeny invariance of B-K ∀ motives.

(B-K paper)

(Rephrasing B-K : Geaty)

B-K conj

$\mathbb{Z}(m)$ $n\mathbb{Z}(m)$. Motivic cohomology $\mathbb{Z}/n\mathbb{Z}(m)$

Adams eigen space

K-theory ⇝ Galois cohomology

Geaty

Isogeny invariance → Herbrand quotient

$H^1_M(E, \quad)$ K

G ← finite cyclic (abelian), M

$h(G, M) = 1$

$H^1_M(E', \quad)$

Google

"Gyanome Ramanujan and more"

on Youtube and watch the interview (Google Hangout) with Ken Ono that we did on Ramanujan's birthday last year.

→ Dialysis machines

→ Eye Care

Forus Health Care

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