

Title: Discussion 2

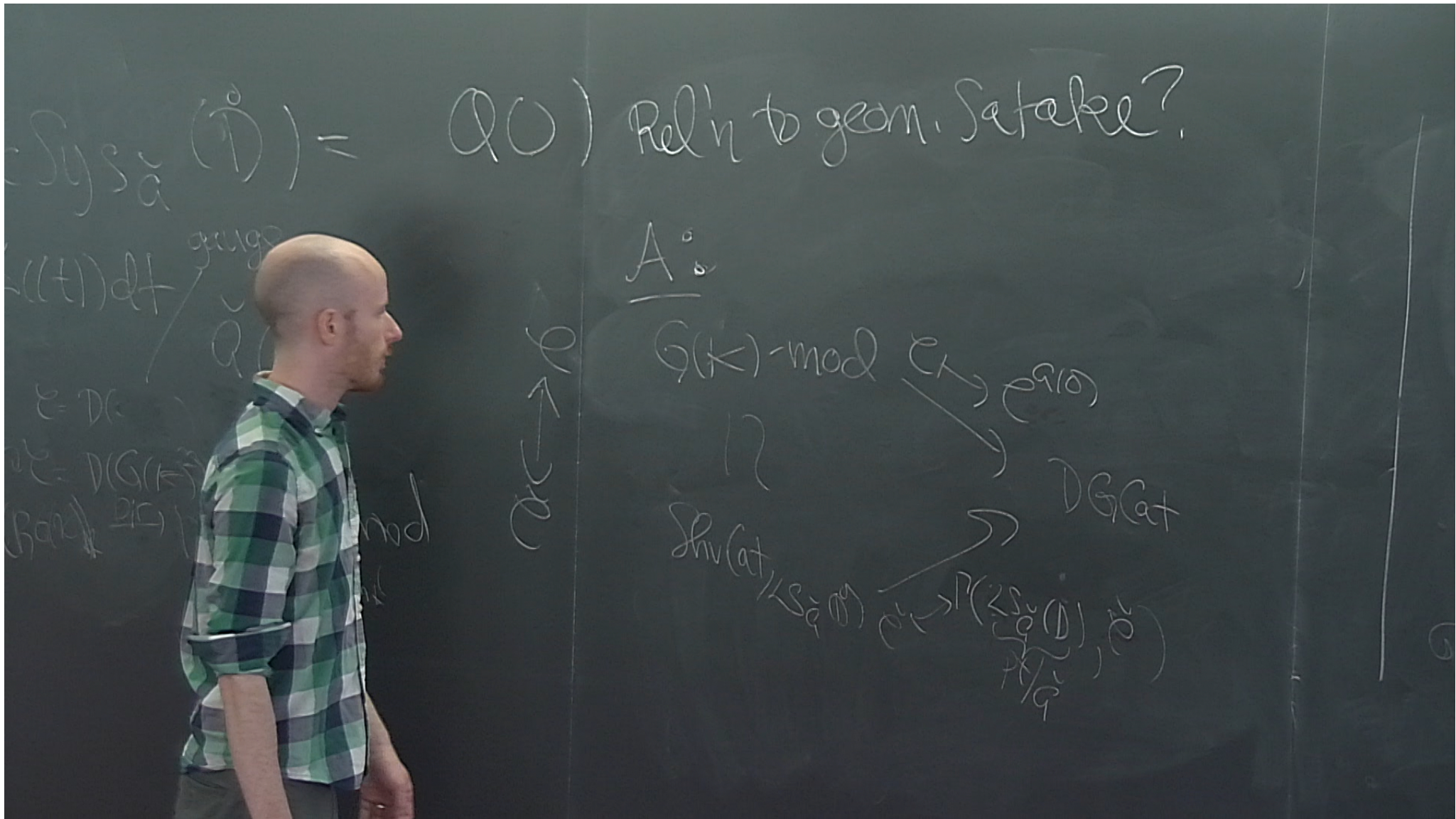
Date: Mar 23, 2018 11:00 AM

URL: <http://pirsa.org/18030084>

Abstract:









Satake?

Endomorphisms of these functors:

$$1) \text{D-mod}(\text{Gr}_q)^{q(0)} = \mathcal{F}^{\text{Sph}}$$

$$2) \text{QCoh}(\mathbb{P}^1/\check{a} \times \mathbb{P}^1/\check{a})$$

Thm:  $\mathcal{F}^{\text{Sph}} \simeq \text{Ind Coh}_{\text{Jrip}}(\mathbb{P}^1/\check{a} \times \mathbb{P}^1/\check{a})$   
"derived geom. Satake"

Also a KM version

$\rightarrow \mathcal{D}C_{\check{a}, \check{a}}^{\text{aff}}$  monoidal  
cat of HC bimod



isms of these

uctors:

$(G_{\mathbb{R}})_{\mathbb{Q}}(0)$

$sh(\mathbb{P}^1)$

$sh(\mathbb{P}^1)$

geom. Ser

$D_{\mathbb{W}}(Bun_G)$

$\mathcal{O}_{Gh}(loc S_{T \times \mathbb{G}})$

$\mathcal{O}_{Gh}(pt(\mathbb{G}) - k_{\mathbb{G}}(\mathbb{G}))$

$loc S_{T \times \mathbb{G}}$   
 $\downarrow \text{rel}$   
 $H/\mathbb{G}$

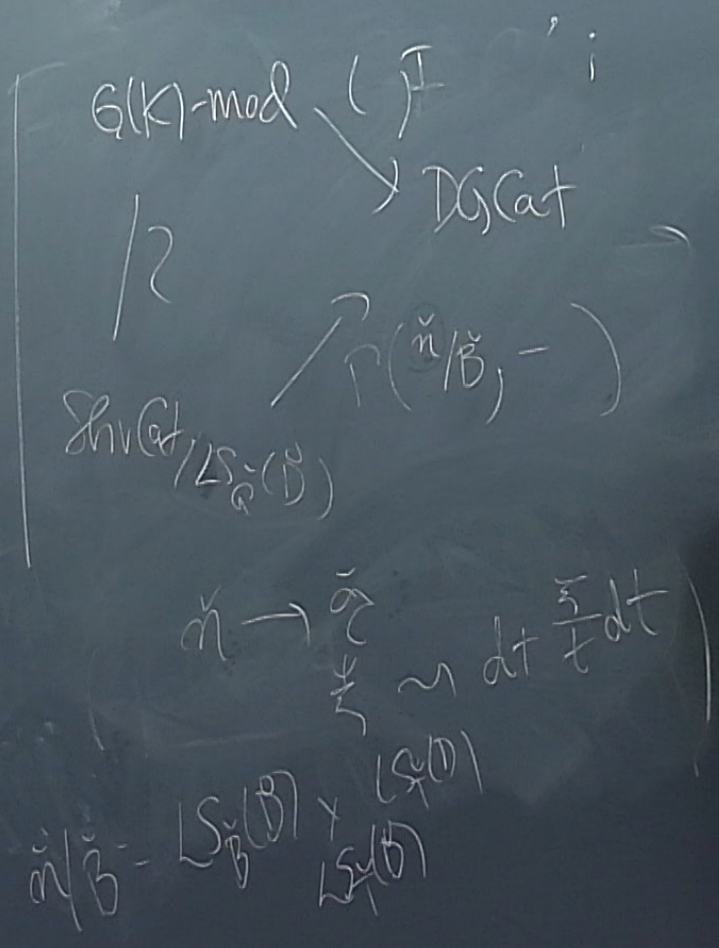
Fake pf of LGL:

1)  $Whit: G(k)\text{-mod}_k \rightarrow$   
 $Sh_{Whit, k}\text{-mod}$   
is an equivalence  
(false; temperance issues)



1)  $I = G(0)$  Invariante  
 $= \{ g \in G(0) \mid g \bmod t \text{ is in } B \}$

$G_2 = \begin{pmatrix} f_1 & g_1 \\ t f_2 & g_2 \end{pmatrix}$   $f_i, g_i \in O$   
 $f_1(0), g_2(0) \neq 0$



Rep<sub>K</sub>(G(K))  
 $\cong$   
 $\mathcal{O}_K\text{-mod}$   
 $\cong$   
 $Hom(Vect, G(K))$



$G(K)\text{-mod}$   $\xrightarrow{(\mathcal{F})}$   $\text{DGCat}$

$\mathbb{R}$   $\xrightarrow{(\check{n}/\check{B}, -)}$

$\text{ShvCat}/\mathcal{L}S_{\check{B}}(\check{B})$

$\check{n} \rightarrow \check{c} \sim dt \frac{\check{c}}{t} dt$

$\check{B} = \mathcal{L}S_{\check{B}}(\check{B}) \times \mathcal{L}S_{\check{B}}(\check{B})$

quantizes to:

$\check{I}\text{-inv} \leftarrow$   
 $\check{I}\text{-inv}$

2)  $G(K)\text{-mod}_K \xrightarrow{(\cdot)_{\check{K}(K)}}$   
 $\mathbb{R}$   
 $\check{G}(K)\text{-mod}_{\check{K}}$



3)  $\check{G}(K)$   
 $H(\mathbb{R})$   
 $\Rightarrow$   
 $A$



$T(K)\text{-mod}_K$   
 $\mathbb{Z} \text{ LS, for } T$

$\dagger(K)\text{-mod}_K$

$\leftarrow$   
 $T(K)\text{-mod}$   
 $\mathbb{Z}$

$\text{SphCat} / \mathbb{Z} \text{ LS}(\mathbb{D})$

$\text{Sph}(\mathbb{D}) / \mathbb{Z}$

Q)  $\checkmark$   
Fact:  $\forall K$

$$\varphi I = \varphi_{N(K)T(0)}$$

$$\alpha, \beta, \gamma \in K$$

$$\checkmark \mathfrak{G} = \mathfrak{GL}_2$$

$$\mathbb{Z} \text{ LS}_{\mathfrak{B}}(\mathbb{D}) = \left\{ \int dt \begin{pmatrix} \alpha & \gamma \\ 0 & \beta \end{pmatrix} dt \right\} / \text{gauge}$$

$$= \left\{ \sigma_1 \rightarrow \mathbb{Z} \rightarrow \sigma_2 \right\}$$



