A local Jacquet-Langlands correspondence for locally analytic D-modules Juan Rodriguez Camargo

(Joint w/ Gabriel Dospinescu.)

F/Op finite, D/F quaternion alg.

Good Study the fuctor of Scholze of p-adic JL

in the realm of loc an regs.

Let C/F some alg dosure.

Gl₂(F) $\times D^{\times}$ \mathcal{O} \mathcal{O}

Def re ach unitary Banach rep'n of Gl2(F). Let Fr/Pit the associated pro-étale sheaf. JL(re):= R[proét(Pr.T. Fre) 5 D".

The (Scholze) II (T) is an adm Barach rep'n of Dx.

Moreover, JL(T) @ Op C = R[proét(Plt, Fr\varphi\varphi).

Question Is IL compatible with (a rep?

Answer In this talk: affirmative ars from "two different directions".

Some notations. Lie Gtz(F) = Jo. Lie D = Jo.

Z(JG) < U(JG). Z(JD) < U(JD).

For V > H. VH-la (or Va) is the subspof la repins.

Rmk. V Barach adm repin of H

\(\frac{1}{2} \) Vla usual la vectors

T as before, $H^i(JL(\pi)^a) = JL^i(\pi)^a$. Ilm (Dospinescu - Rodriguez (amargo) π as before. Then $JL(\pi)^{D^x-la} = JL(\pi^{Gla(F)-la}).$ Moreover, $Z(J_D) \simeq Z(J_G)$ act in the same way.

The (Dospinescu - Rodriguez (amargo)

(1) Dum structure sheaf on Man.

Then, as sheaves on Man, we have

Other = Other (lowest sheaf).

Moreover, the action of Z(Ja) = Z(Ja) are the same.

(2) For either sheaf Bx arising from FF cure,

GLETT-la = Bx

(actual derived sheaves).

To proce the previous thm, one needs two inputs:

Lem H cpt p-adic Lie gp,

V[†] p-adic complete rep'n of H.

Suppose H G V[†]/p factors through finite quotient.

Then H G V[†]/p] is locally analytic.

Thr. (Zayalov) Let U=Spa(A. A.) sm/c.
Then R[proof(U. 6t) is almost coherent over At.

⇒ HGU. Then HG R[prot[u, 07]) almost factor through finite quotient.

→ H S RTproof (U. Ô) is locally analytic
H S RTproof (U. Op) is also locally analytic

Q Does Il presence la rep's?

A (Boring) No.

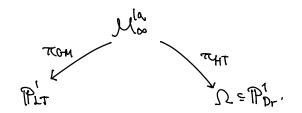
Eg. if π = alg rep'n then JL(π) is a Banach-Colmez space.

Expectation IL(12) should be a global section of an adm (a rep of D' over XFF. c.

Some evidence by working over \hat{o} :

Def (Pan) Oho = \hat{o} Charles, \hat{o} \hat{u}_{∞} .

When = (IMDI, \hat{o} \hat{u}_{∞}), \hat{u}_{∞} = (IMDI, \hat{o} \hat{u}_{∞}).



Warning Than & TCHT are Not forsors anymore!

Det LT side: DLT = Mopin (Tpin) = Mopin (Yo/b°)

DLT = Mopin (Yo/n°)

all differential operators of line bundles.

Dr side: Dor = Mopin (Tpin) = Mopin (Yo/b°).

Dor = Mopin (Yo/n°).

Def D'×DIT < M. d(PIT) space of solid la D'-equiv D-mod.

The (Pan-Rodriguez Camargo) n°c yo & Ticyo, w/ actions by Ole trivially

Dor. Det ? Ole

The (Dospinescu-Rodriguez Canargo)

(1) = functor $\Omega \subseteq \mathbb{R}_{Dr}^{1}$ $J_{Dr}^{1} : G_{2}(\mathbb{Q}_{p}) - \widetilde{D}_{Dr} - Mod(\Omega)$ $D^{2} - \widetilde{D}_{LT} - Mod(\mathbb{R}_{LT}^{1})$.

(2) The loc an repin of Gl2 (Op) \(\Rightarrow\) \(\tau\) (\(\hat{D}_{Dr}\Open\) \(\mathreal\) (\(\hat{D}_{Dr}\Open\) \(\mathreal\) \(\mathreal\) \(\mathreal\).

(3) F adm GL2(Op) × Dor-mod over Ω

⇒ JLP(F) is adm D*-Dir-mod

⇒ As P' is proper, JL(π⊗Ô) is (a adm for π la adm.