$S/\mathbb{C}$ als var.

V.H.S on S :

V/S local system $/\mathbb{R}$

$V \otimes \mathcal{O}_S$ - a v.b $/S = \mathcal{V}_S$

$\nabla : \mathcal{V}_S \to \mathcal{V}_S \otimes \Omega^1_S$

$v \in V \quad \nabla v = 0$

$+ \qquad F^{i+1} \subset F^i \subset \cdots \mathcal{V}_S$

$\nabla F^i \subseteq F^{i-1} \otimes \Omega^1_S$

$-$

For each $s \in S$

V_s + $F^i \cap V_s$ a pure H.S..

- $X \xrightarrow{\pi} S$ proper.

$V = R^i \pi_* \mathbb{R}$ a V.H.S.

- Periods domains $\Gamma \backslash D$

Period map $\Phi : S \to \Gamma \backslash D$

Griffiths : Φ analytic

Bakker, Klingler, Tsimerman

Φ definable..

Conj: Im Φ is algebraic

Griffiths: V / S

$S \to \Gamma \backslash D$

$S \subset \overline{S}$, $\overline{S} - S = E$

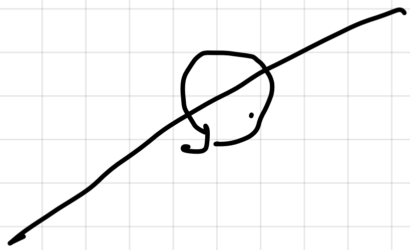
$s \in F \qquad s \in U \cong \Delta^n$

$\Delta = \{ |z| < \varepsilon \}$

$U \cap S \cong \Delta^* \times \Delta^{n-1}$

local monodromy = Picard-Lefschetz

operator.



Assume: local monodromy has finite

image. $\Rightarrow$ trivialize monodromy

!?

$$\overline{S} \supset S^* \supset S$$

$S \cup$ points with fin monodromy

Griffiths: 1. Φ extends to S^*

2. $\Phi : S^* \to \Gamma \backslash D$ proper

3. $\Phi(S^*)$ is closed in $\Gamma \backslash D$

4. $\Phi(S^*) - \Phi(S)$ analytic subvariety