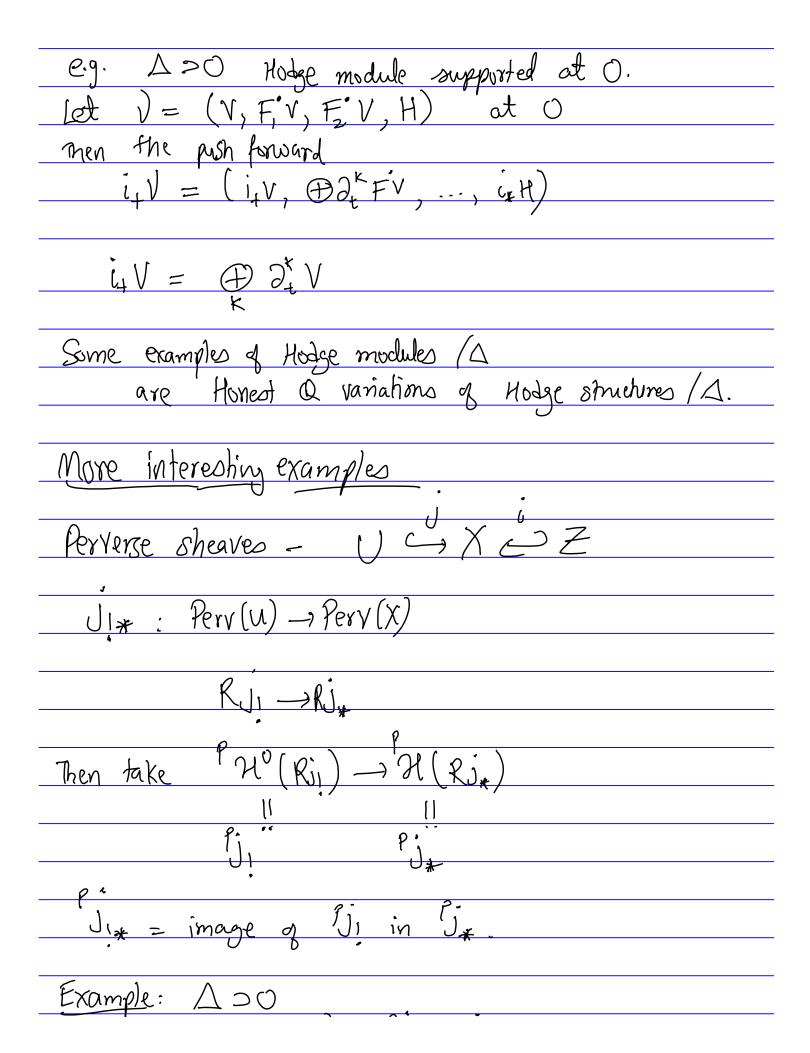
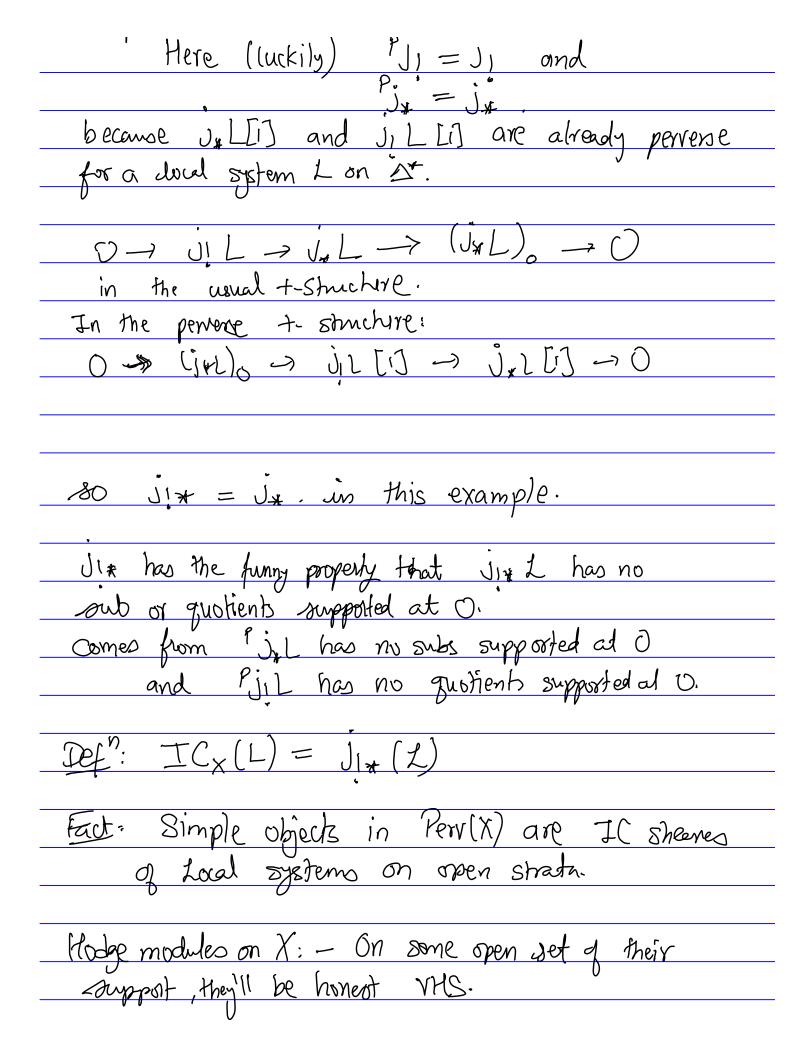
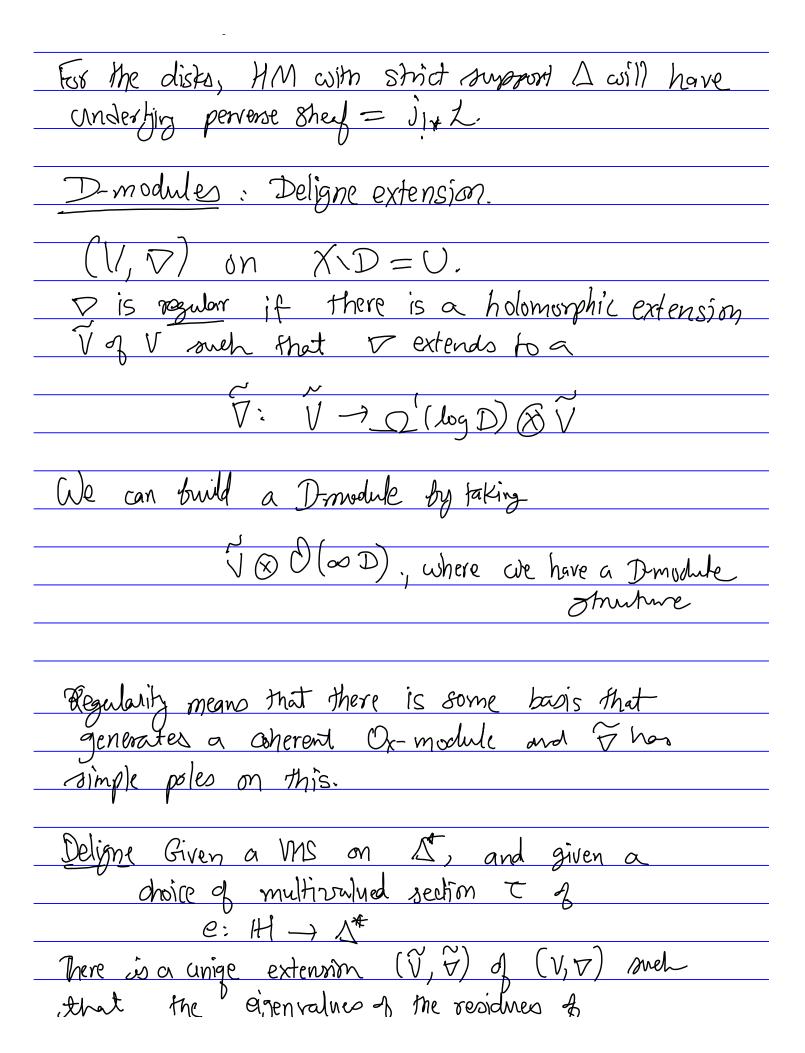
Degenerations of VHS
X smooth quasi-proj vaniety stratified X
A 20 stratified disk
Recall Q VHS / X, consists of
(i) Vector bundle V with a Plat connection V
Filtration satisfying Giffiths transversality  VFK Z FK+1
3 Antiholomorphic filtration.
@ Q. local system H
$6) \qquad \alpha:  \text{Ker} \nabla \xrightarrow{\sim} H \otimes \mathbb{C}$
Dal- understand singularities that arise in the above.
V module
FV ~ filtered D-module
H ~> perverse sheet
∠ ~> Je Rham complex. (M) ~> H⊗C
DRIM) is defined as follows
DR(M) is defined as follows—  [D -> 2'8D -> 20D ->> W&D] ~ W
$\widehat{\mathbb{R}}M = DR(M)$
- DR (WRM)







Res F ∈ T (△*)
Assume. The eigenvalues of the residue are real.
Assume: the eigenvalues of the residue are real.  so extension is determined by b ER, t lands in  (strip E - ]  b b++
(ship E-3)
し b b升 / 
<del>*</del> \/
eV is trivial and has 2 T monodromy
Assume Tunipotent. so we can define
Assume Tunipotent. So we can define $N = L \cdot log(T)$
Given SEHO(EH) define $\widetilde{S} = e^{2\pi i z N} S$
$\widetilde{S} = e^{2\pi i Z N} S$
Then $\widetilde{S}(ZH) = T\widetilde{S}(Z)$
flat
7 5 descends - Take a frame P1,, Pn of V.  Then P111 Pn WIII be a frame of V.  Then V extendes to F with secidite N.
Then Eizi En Will be a frame of V.
Then V extender to F with residue N.
The choice of b leads to
V
Vb CV 2 meromorphic v.b.
1:5

different holomorphic. sub-bundles depending on b.
The choices of b defines a real filtration of V.
$gr^b\widetilde{V} = V^b/\widetilde{V}^{>b}$
b-egenspace of V(0) of residue N.
Fact - DR(V, 7) = Riv not Ji*V
7 <sub>min</sub> = 7>-1
Fact $\mathbb{DR}\left(\widetilde{V_{\min}},\widetilde{\nabla}\right) = \widetilde{U_{1*}}V$
Intermediate ext- of D-module.
$V_{2}$ $V_{2}$ $V_{3}$ and
t Va acts as b on grt.
4