Affine line; projective line (Refs: Auroux MS course; Ballard, Meet HMS)

$Y = \mathbb{A}^1 = \operatorname{Spec} \mathbb{C}[z]$

Objects to consider: $\mathcal{O}_a$ for $a \in \mathbb{C}$; $\mathcal{O}$ (like last week).

Compute Hom's (like last week).

X is a more general object than a symp. mfd.: it is a symp. mfd. with stops.

In $\dim_{\mathbb{R}} = 2$, this means an exact 2-dim'l symp. mfd with boundary, together with a finite set σ of points ('stops') on the boundary.

Defn: $\mathrm{Fuk}(X, \sigma)$ has

- objects are exact Lags

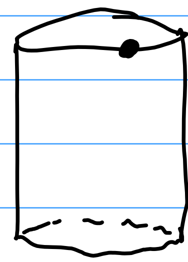
$$(L, \partial L) \subset (X, \partial X - \sigma).$$

- $\hom^*(L_0, L_1) := \mathbb{C}\langle L_0 \cap \varphi(L_1)\rangle$

where $\varphi : (X, \partial X) \longrightarrow (X, \partial X)$ 'wraps' near the boundary, 'as far as possible without going past the stops'.

The rest is like the definition of the wrapped

Fukaya category.

Mirror to $\mathbb{A}^1$ = 

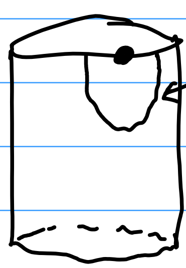
Like last time,

$(S^1, \xi_a) \longleftrightarrow \mathcal{O}_a$ for $a \neq 0$

$\mathbb{R} \longleftrightarrow \mathcal{O}$

Check: $\mathrm{Hom}^*(\mathbb{R}, \mathbb{R}) \simeq \mathbb{C}[z]$.

There's also a new object



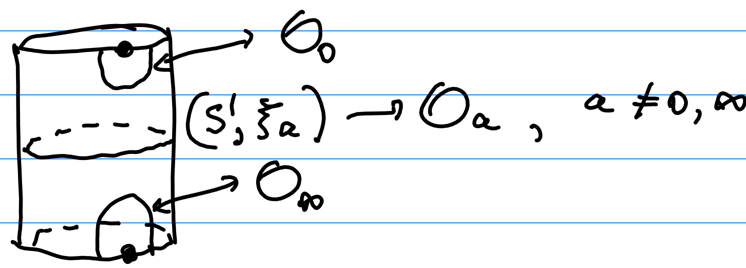
$L_0 \longleftrightarrow \mathcal{O}_0$.

$\underline{Y = \mathbb{P}^1.}$

Objects to consider: $\mathcal{O}_a$, $a \in \mathbb{P}^1$; $\mathcal{O}(k)$, $k \in \mathbb{Z}$.

Compute $\mathrm{Hom}^*(\mathcal{O}(i), \mathcal{O}(j))$ and

$$\mathrm{Hom}^*(\mathcal{O}(i), \mathcal{O}(j)) \otimes \mathrm{Hom}^*(\mathcal{O}(j), \mathcal{O}(k)) \longrightarrow \mathrm{Hom}^*(\mathcal{O}(i), \mathcal{O}(k)).$$

$X \simeq$ 

Work out what mirror L_k to $\mathcal{O}(k)$ is; compute

$$\mathrm{Hom}^*(L_i, L_j) \otimes \mathrm{Hom}^*(L_j, L_k) \longrightarrow \mathrm{Hom}^*(L_i, L_k)$$