Pandharipande – Min II : Relations in the tautological ring via Gromov-Witten th

$\pi : \mathcal{X}_\Lambda \longrightarrow \mathcal{M}_\Lambda$ univ. fcf. over moduli space of Λ-quasi pol. K3s.

$H \in \Lambda$

$$\begin{array}{ccc} \overline{\mathcal{M}}_{g,n}(\pi, H) & \xrightarrow{ev} & \mathcal{X}_\Lambda \underset{\mathcal{M}_\Lambda}{\times} \cdots \underset{\mathcal{M}_\Lambda}{\times} \mathcal{X}_\Lambda \\ \downarrow \tau & & \\ \overline{\mathcal{M}}_{g,n} & & \end{array}$$

Want to compute:

$$ev_*\left(\tau^*(Rel) \cap [\overline{\mathcal{M}}_{g,n}(\pi, H)]^{red}\right)$$

for a nontrivial relation $Rel = 0$ in $A^*(\overline{\mathcal{M}}_{g,n})$.

Two cases: (i) WDVV relation in $\overline{\mathcal{M}}_{0,4}$

(ii) Getzler rela in $\overline{\mathcal{M}}_{1,4}$

((iii) Bae-Schmitt rela in $\mathcal{M}_{0,2}$)

Plan:

(1) Formal part (Calculus of GW classes)

(2) Technical part

(3) HK case.