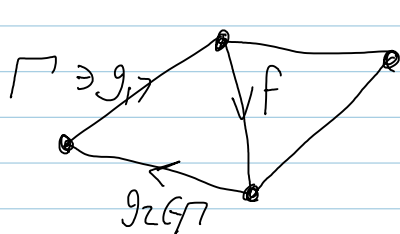


September-19-11
3:21 AM

Example: $M^n: \partial M = \emptyset$, oriented, compact

Find $\pi_1(X)$. Fix a finite group Γ .

$|\text{Hom}(\pi_1(X), \Gamma)|$ is a number.



$M \rightarrow K(\Gamma, 1)$
All vertices go to the basepoint. $F = g_1 g_2$

$$\theta \in H^1(\Gamma, \mathbb{C}^*) \quad \psi: \pi_1(M) \rightarrow \Gamma$$

$$\psi^*(\theta) \in H^1(M, \mathbb{C}^*)$$

$$DW_0(M) := \sum_{\psi} \langle \psi^*(\theta), [M] \rangle$$

Dijkgraaf-Witten

\mathcal{C} : Fusion category

$Z \downarrow$ Drinfeld's center

$Z(\mathcal{C})$ a modular category

Thm (Turaev-Virelizier)

\forall fusion category \mathcal{C} over \mathbb{C} ,

$$|M|_{\mathcal{C}} = \mathcal{T}_{Z(\mathcal{C})}(M)$$

\uparrow Turaev-Viro

\uparrow Reshetikhin-Turaev