$$\tilde{q} : \Lambda \longrightarrow \overline{\mathbb{Q}}_\ell^*(-1)$$

$$\updownarrow$$

gerbes

$$\mathrm{Whit}_q(\mathrm{Fl}_G) \subseteq \mathrm{Shv}_q(\mathrm{Fl}_G)$$

$q \rightsquigarrow \Omega_q^{\mathrm{loc}}$ - factorization algebra on Conf

Thm (Yang)

$$F : \mathrm{Whit}_q(\mathrm{Fl}_G) \xrightarrow{\sim} \Omega_q^{\mathrm{loc}}\text{-mod}^{\mathrm{Fact}}$$

$$\mathrm{Conf} = \bigsqcup_{\lambda \in \Lambda^{\mathrm{neg}} - 0} \mathrm{Conf}^\lambda$$

$$\mathrm{Conf}^\lambda - \Delta X \overset{j}{\hookrightarrow} \mathrm{Conf}^\lambda$$

1) $\lambda \neq w(\rho) - \rho$, $w \in W$: $\ell(w) = 2$

apply $H^0(j_!)$

2) $\lambda = w(\rho) - \rho$, $\ell(w) = 2$

$j_{!*}$

$$\Omega_q^{\mathrm{DK}} = \mathbb{D}(\Omega_{q^{-1}}^{\mathrm{Lus}})$$

$\mathcal{G}|_{\mathrm{Conf}^{-\alpha_i}}$ trivial

$$(\Omega_q^{\mathrm{Lus}})^{-\alpha_i} = \omega_x[-1]$$

$$\begin{tikzcd} \mathrm{Gr}_{\mathrm{Conf}} \arrow[d, "\pi"] & \mathrm{Fl}_{\mathrm{Conf}_{\infty \cdot x}} \arrow[d, "\pi"] \\ \mathrm{Conf} & \mathrm{Conf}_{\infty \cdot x} \end{tikzcd}$$

$$F: \mathrm{Whit}_q(\mathrm{Fl}_G) \longrightarrow \Omega_q^{\mathrm{Lus}}\text{-mod}^{\mathrm{Fact}}$$

$$J_!(\mathcal{F}) := \pi_*\left(\mathcal{F} \overset{!}{\otimes} \Delta_q^{\frac{\infty}{2}}\right)$$

$$J_*(\mathcal{F}) := \pi_a\left(\mathcal{F} \overset{!}{\otimes} \nabla_q^{\frac{\infty}{2}}\right)$$

$$J_{!*}(\mathcal{F}) := \pi_a\left(\mathcal{F} \overset{!}{\otimes} IC_q^{\frac{\infty}{2}}\right)$$

$$\mathcal{F} \in \mathrm{Whit}_q(\mathrm{Fl}_G)$$

$$\downarrow$$

$$\mathrm{Whit}_q(\mathrm{Fl}_{\mathrm{Conf} \times X})$$

$$\begin{array}{ccc} \mathrm{Gr}_{\mathrm{Conf}} & & t^{\lambda} \\ \uparrow s & & \uparrow \\ \mathrm{Conf} & & \lambda \cdot x \end{array}$$

$$\mathcal{L}N^-_{\mathrm{Conf}}$$

$$S^-_{\mathrm{Conf}} \xrightarrow{i^-_{\mathrm{Conf}}} \mathrm{Gr}_{\mathrm{Conf}}$$

$$\Delta_q^{\frac{\infty}{2}} = (i^-_{\mathrm{Conf}})_!\left(\omega_{\mathrm{Conf}^-}\right)$$

$\nabla_1^{\frac{\infty}{2}} = (\qquad)_*$

$\bar{N}(K)\, t^{\lambda}$ - un. mod orbit

$$\lambda_x \xrightarrow{i_\lambda} \mathrm{Gr}_{f_{\infty x}}$$

$$(i_\lambda)^! J_!(\mathcal{F}) = H(\mathrm{Fl}_G, \mathcal{F} \overset{!}{\otimes} i_!^{-\lambda}(\omega))$$

$$\Big\| \quad \bar{N}(K)\, t^{\lambda} \xrightarrow{i^{-\lambda}} \mathrm{Fl}_G$$

$$\mathrm{Hom}(\Delta_\lambda^{\mathrm{whit}}, \mathcal{F})$$

$$\Delta_\lambda^{\mathrm{whit}} = \mathrm{Av}_!^{N(K),\chi}(\mathrm{BMW}_\lambda)$$

λ - dominant $\quad \mathrm{BMW}_\lambda = j_{\lambda,!}$

Thm $\quad J_!(\mathrm{unit}^{\mathrm{whit}}) = \Omega_q^{\mathrm{Lus}}$

$$J_*(\mathrm{unit}^{\mathrm{whit}}) = \Omega_q^{DK}$$

$$J_{!*}(\mathrm{Whit}^{\mathrm{whit}}) = \Omega_q^{\mathrm{small}}$$

$$F : \mathrm{Whit}_q(Fl_G) \longrightarrow \Omega_q^{\mathrm{Lus}}\text{-mod}^{\mathrm{Fact}}$$

$$\Delta_\lambda^{\mathrm{whit}} \in \mathrm{Whit}_q(Fl_G)$$

$$\Delta_\lambda^{\mathrm{fact}} \in \Omega_q^{\mathrm{Lus}}\text{-mod}^{\mathrm{Fact}}$$

$$\mathrm{Hom}(\Delta_\lambda^{\mathrm{Fact}}, \mathcal{F}) = i_{\lambda x}^!(\mathcal{F})$$

$$\{\lambda \cdot x\} \times \mathrm{Conf}(X - x) \xhookrightarrow{j_{\lambda x}} \mathrm{Conf}_{\infty \cdot x}$$

$$\Delta_\lambda^{\mathrm{Fact}} = j_{\lambda x !}(\underline{e} \boxtimes \Omega_q^{\mathrm{Lus}})$$

<u>Thm</u> $\Delta_\lambda^{\mathrm{Fact}} \xrightarrow{\sim} F(\Delta_\lambda^{\mathrm{whit}})$

$$(i_{\lambda x})^! \cdot J_!(\mathcal{F}) :=$$

$$\Downarrow$$

$$(i_{\mu x})^* J_!(\Delta_\lambda^{\mathrm{Whit}}) = 0$$

for $\mu \neq \lambda$.

$$\mathbb{D} : \mathrm{Whit}_q(\mathrm{Fl}_G) \longrightarrow \mathrm{Whit}_{q^{-1}}(\mathrm{Fl}_G)$$

$$\mathbb{D}(\mathrm{Av}_!^{N(K),\chi}(\mathcal{F})) = \mathrm{Av}_{\chi,\mathrm{ren}}^{N(K),\chi}(\mathbb{D}(\mathcal{F}))$$

<u>Thm</u> (Yang)

$$\begin{tikzcd}
\mathrm{Whit}_q(\mathrm{Fl}_G) \arrow[r, "\mathbb{D}"] \arrow[d, "J_!"] & \mathrm{Whit}_{q^{-1}}(\mathrm{Fl}_G) \arrow[d, "J_*"] \\
\mathrm{Shv}_q(\mathrm{Conf}) \arrow[r, "\mathbb{D}"'] & \mathrm{Shv}_{q^{-1}}(\mathrm{Conf})
\end{tikzcd}$$

$$\Downarrow$$

$$J_!(\Delta_\lambda^{\mathrm{Fact}}) = \Delta_\lambda^{\mathrm{Fact}}$$

$$\begin{array}{c}\mathrm{Whit}_q(\mathrm{Gr}_G)\\ \Big\uparrow{\scriptstyle q\,\pi}\\ \mathrm{whit}(\overline{\mathrm{Bun}}_N, \infty\cdot x)\end{array}$$

$$J_! \circ \pi^! : \mathrm{Whit}_{glob} \longrightarrow \mathrm{Conf}$$

$$\begin{tikzcd}
 & \left(\overline{\mathrm{Bun}}_{N,\infty x} \times_{\mathrm{Bun}_G} \overline{\mathrm{Bun}}_{B^-}\right)^{\circ} = \overline{Z} \arrow[dl, "q"'] \arrow[d, "\pi"] \\
\overline{\mathrm{Bun}}_{N,\infty\cdot x} & \mathrm{Conf}
\end{tikzcd}$$

$$\pi_*\left(\mathcal{F} \boxtimes_{\mathrm{Bun}_G} j_!(e_{\mathrm{Bun}_{B^-}})\right).$$