

$$\mathfrak{h}\rtimes G \overset{\text{diff}}{\longrightarrow} \mathfrak{h}$$

$$T^\sharp \mathfrak{h}\rtimes G \overset{\text{plex}}{\longrightarrow} T^\sharp \mathfrak{h}$$

$$\begin{array}{ccccc} T^\sharp \mathfrak{h} & \xrightarrow{\pi} & \mathfrak{h} & \xrightarrow[\text{G inv}]{\gamma} & \mathbb{R} \\ & \searrow & & \nearrow & \\ & & G \text{ inv} & & \\ & & \pi \ltimes \gamma & & \end{array}$$

$$\underbrace{\pi \ltimes \gamma} \rtimes \underbrace{\pi \ltimes \gamma} = 0$$

$$\overset{+}{\mathfrak{g}}\text{:}\mathfrak{J} \text{ moment Frobenius}$$

$$\begin{array}{ccc} T^\sharp \mathfrak{h} & \xrightarrow{\Phi} & \overset{+}{\mathfrak{g}} \\ \cup & & \cup \\ \Phi \mathcal{O} & \xrightarrow{\Phi} & \mathcal{O} \end{array}$$

$$\text{null-foliation}$$

$$\underline{\Phi \mathcal{O}}^0_h = \frac{\mathfrak{b}_h \in \underline{\Phi \mathcal{O}}_h}{\mathfrak{b}_h \overbrace{\Phi \rtimes \mathfrak{J}}^h = \underbrace{\mathfrak{b}_h^h \Phi}_{\mathfrak{b}_h \rtimes \Phi} \mathfrak{J} = 0}$$

$$\mathfrak{b}:\mathfrak{t} \in \underline{\Phi \mathcal{O}}^0 \Rightarrow \mathfrak{b} \rtimes \mathfrak{t} \in \underline{\Phi \mathcal{O}}^0$$

$$d\left(\Phi \rtimes \mathfrak{J}\right)=\Phi \rtimes d\mathfrak{J}=0$$

$$0=(\mathfrak{b}\mathfrak{t}\mathfrak{t}\mathfrak{b})\,d\left(\Phi \rtimes \mathfrak{J}\right)=(\mathfrak{b}\mathfrak{t}\mathfrak{t}\mathfrak{b})\,d\left(\Phi \rtimes \mathfrak{J}\right)+(\mathfrak{b}\mathfrak{t}\mathfrak{t}\mathfrak{b})\,d\left(\Phi \rtimes \mathfrak{J}\right)+(\mathfrak{b}\mathfrak{t}\mathfrak{t}\mathfrak{b})\,d\left(\Phi \rtimes \mathfrak{J}\right)$$

$$\text{Vor}\;\;\Phi_{\underline{\hspace{.1cm}}_h}\;\mathcal{O}_{\hspace{.1cm}_h\Phi}=\underline{\Phi \mathcal{O}}_{\hspace{.1cm}_h}$$

$$\dim \, \underline{\Phi \mathcal{O}}^0_{\hbar} = \text{cst} \implies \Phi \mathcal{O} \xrightarrow{\pi} \overline{\Phi \mathcal{O}} = \Phi \mathcal{O} / \underline{\Phi \mathcal{O}}^0 \text{ integrable}$$

$$\begin{array}{ccc} & & \mathfrak{g}^+ \colon \mathfrak{J} \\ & \nearrow \Phi & \\ \Phi \mathcal{O} & \Phi \ltimes \mathfrak{J} = \pi \ltimes \bar{\mathfrak{J}} & \\ & \searrow \pi & \\ & & \overline{\Phi \mathcal{O}} \colon \bar{\mathfrak{J}} \end{array}$$

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$$\text{co-isotropic} \quad \overbrace{\underline{\Phi \mathcal{O}}_{\hbar}^{\perp} \overset{\hbar}{\Phi}} \sqsubset \underline{\Phi \mathcal{O}}_{\hbar} \overset{\hbar}{\Phi} \sqsubset \mathfrak{g}^+ \overset{\hbar}{\Phi}$$

$$\begin{array}{ccccc} & & \mathfrak{g}^+ & & \\ & \nearrow \Phi & & \searrow \mathfrak{J} & \\ \Phi \mathcal{O} & & \Phi \ltimes \mathfrak{J} & \xrightarrow{\hspace{2cm}} & \mathbb{R} \\ & \searrow \pi & \pi \ltimes \bar{\mathfrak{J}} & \xrightarrow{\hspace{2cm}} & \\ & & \Phi \bar{\mathcal{O}} & \xrightarrow{\hspace{2cm}} & \mathbb{R} \\ & & & \nwarrow \bar{\mathfrak{J}} & \end{array}$$

$$\begin{cases} \Phi \ltimes \mathfrak{J} = \pi \ltimes \bar{\mathfrak{J}} \\ \Phi \ltimes \mathfrak{J} = \pi \ltimes \bar{\mathfrak{J}} \end{cases} \implies \Phi \ltimes \underbrace{\mathfrak{J} \rtimes \mathfrak{J}} = \pi \ltimes \underbrace{\bar{\mathfrak{J}} \rtimes \bar{\mathfrak{J}}}$$

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