

$$\begin{array}{l}XP\rightarrow XGXG(A,\Phi)AP\Phi\in\Omega^{1,0}(X;\operatorname{ad} P\otimes C)X_A=-[\Phi,\Phi^*]\\ \bar{\partial}_A\Phi=0FA\bar{\partial}_A\overline{AF\mathcal{M}\mathcal{M}}GGM P\psi\in\Omega^0(X;\operatorname{ad} P)G(A,\Phi)\mapsto\psi d\psi^{-1}+\psi A\psi^{-1}=\psi d_A\psi^{-1}\\ \Phi\mapsto\psi\Phi\psi^{-1}d_A\mathcal{M}\mathcal{M}\mathcal{M}^{\cdot\cdot}\mathfrak{a}\end{array}$$

$$\begin{array}{l}\overset{\mathfrak{a}\mathfrak{a}}{(M,\omega)^1GM\mu^*:g\rightarrow C^\infty(M)}\\ g\rightarrow X(M)\xi\mapsto X_\xi\xi\in g\mu^*(\xi)X_\xi\mu^*(\xi))=\iota_{X_\xi}\omega.\end{array}$$

$$\begin{array}{l}\mu\mu^*([\xi,\eta])=-\{\mu^*(\xi),\mu^*(\eta)\}.\\ {}^2\mu:M\rightarrow g^*\langle\mu(x),\xi\rangle=(\mu^*(\xi))(x)\mu Gg^*\mu^{-1}(0)\subset MG\mu MG\mu^{-1}(0)\mu^{-1}(0)/GMG(M\omega)G\mu MG:=\mu^{-1}(0)/GMG\omega'\pi^*\omega'=i^*\omega\\ \mathfrak{a}\mathfrak{a}(M,g)GMM/GGMGM/Gx\in MxV_x\subset T_xMgGMV_xV_x\theta gG\theta MH_x\subset T_xMV_xX,YM/G\tilde{X},\tilde{Y}Mh(X,Y)=g(\tilde{X},\tilde{Y})gG\\ \mathfrak{a}(M,g,\mathbf{J},\omega)\mathfrak{a}G(M,\omega)MGg'MGMG\mathfrak{a}N=\mu^{-1}(0)N/G=mGTNTMH\subset TNN\rightarrow N/Gg'T(N/G)GH\rightarrow NHg|_NTM|_I\\ \mu:M\rightarrow g^*\otimes R^3\mu(x)=(\mu_1(x),\mu_2(x),\mu_3(x))\mu\mu^{-1}(0)MGG\mu^{-1}(0)\mu^{-1}(0)/G(M,g,\vec{\mathbf{I}},\vec{\omega})G\mu^{-1}(0)/G\mathfrak{a}\mu_+=\mu_2+i\mu_3:M\rightarrow\end{array}$$

$$\begin{array}{l}X=(\Psi_1,\Phi_1)A\times\Omega\Psi_1=\bar{\partial}_A\psi\Phi_1=[\Phi,\psi]\psi\in\Omega^0(X;\operatorname{ad} P)A\times\Omega(\dot{A}^{0,1},\dot{\Phi})(A,\Phi)\in A\times\Omega\iota_X\omega)(\dot{A}^{0,1},\dot{\Phi})=\int_X\operatorname{Tr}(-[\Phi,\psi]\dot{A}\\ =\int_X\operatorname{Tr}(\psi[\dot{A}^{0,1},\Phi]+\bar{\partial}_A\dot{\Phi}\psi)\\ =df(\dot{A}^{0,1},\dot{\Phi})f=\int_X\operatorname{Tr}(\bar{\partial}_A\Phi\psi)\omega fX\psi\mapsto fGf\omega_2\omega_3\omega\mu_2\mu_3\mu fA\times\Omega\mathfrak{a}\Psi,\Phi),(\Psi,\Phi))=2i\int_X\operatorname{Tr}(\Psi^*\Psi+\Phi\Phi^*)(\Psi,\Phi)\in\Omega^{0,1}(X;\operatorname{ad}\\ M\mathfrak{a}\mathcal{M}\mathfrak{a}A\times\Omega G\mathfrak{a}\mu^{-1}(0)/G\mathfrak{a}? \mu^{-1}(0)/GA\times\Omega\mu^{-1}(0)/G?\mu^{-1}(0)/GgA\times\Omega\end{array}$$