13. • $d \log \det = \mathrm{Tr}(A^{-1} dA)$

closed 1-form on $G^{-\infty}_{iso}(n)$

• $\alpha = \overline{\mathrm{Tr}}_H (A^{-1} dA)$ extends it to $G^{0}_{iso}(n)$

• $d + \alpha$ is a connection on trivial bundle $G^{0}_{iso}(n) \times \mathbb{C}$ invariant under $G^{-\infty}_{iso}(n)$.

• $d\alpha$ is the curvature of the determinant line bundle over $A^{0}_{iso}(n)$

$$d\alpha = \frac{1}{2} \mathrm{Tr}_R (A^{-1} dA \, A^{-1} dA \, A^{-1} D_H A)$$

descends to a closed form on $A^{0}_{iso}(n)$.

Not exact