3. $A^{\mathbb{Z}}(X)$ ($\sim A^{\circ}(X)$) has a unique trace

$$Tr_R(A) = \int_{S^*X} a_{-n}$$

Term $n = \dim X$ from top in expansion

Wodzicki, Guillemin

Tr has an extension $\overline{Tr}_g$ to $\Psi^{\mathbb{Z}}(X)$ Same choices

$$\overline{Tr}_g([A,B]) = Tr_R(B D_g A)$$

↑ Extra derivative, unique with this extension deriv.

As before define determinant line bundle

$$G^{\mathbb{Z}}(X) = \{\text{Invertibles in } \Psi^{\mathbb{Z}}(X)\}$$

$G^{\mathbb{Z}}(X) \times \mathbb{C}$ $\quad (P,g) \sim (P',g')$

$P' = P\varphi$, $g' = \det\varphi \cdot g$

$\varphi \in G^{-\infty}(X)$