6.

$$\Psi^{-\infty}_{sm}(X) = \mathcal{S}(\mathbb{R}; \Psi^{-\infty}(X))$$

$$= \dot{C}^{\infty}([-1,1] \times X^2)$$

commutation

non-commutation

$$K^{-2}(Y) = [Y; G^{-\infty}_{sm}(X)]$$

Any cancels $\times$ $\dim X > 0$

$$G^{-\infty}_{sm}(X) = \{ Id + E;\ E \in \Psi^{-\infty}_{sm}(X),\ (Id+E)^{-1} \text{ exists} \}$$

$$c_0 : K^{-2}(Y) \longrightarrow \mathbb{Z}$$

$$c : K^{-2}(Y) \longrightarrow H^{\text{even}}(Y)$$

$$c_0 = \frac{1}{2\pi i} \int_{-\infty}^{\infty} \mathrm{Tr}\left(f^{-1} \frac{d}{ds} f\right) ds$$

$$= \frac{1}{2\pi i} \mathrm{Tr}_I \left(f^{-1} \frac{d}{ds} f\right)$$

$$\mathrm{ind}(P) = c_0(Id + E(s)).$$