

calculus

Space X

Real variable
 x^m

Infinitesimal dx

Integral of infinitesimal

Line element

$$\sqrt{g_{\mu\nu} dx^\mu dx^\nu}$$

Algebra \mathcal{A}

self adjoint operator
 H

compact operator E

$f_E =$ coefficient of
 $\log(\lambda)$ in $\text{Tr}_\lambda(E)$

$D^{-1} =$ Fermion
propagator

spectral triple: $(\mathcal{A}, \mathcal{H}, D)$

$$d(A, B) = \sup_{\|F(D, \cdot)\| \leq 1} |F(A) - F(B)|$$