April
18
(Sarah)
D
$h_t =$
h
D
D
L_0+
h_t

h_t
t
h_t
i
$(D) =$
0
D
D_s
$D_0 =$
$ddt+$
L_0+
h_-
$D_1 =$
D
L_0+
h_-
$|$
$|$
t_-
t_0
L_0+
h_-
L_0+
h_t
L_0+
h_{t_0}
$|$
$|$
t_-
t_+
L_0+
h_-
L_0+
h_t
L_0+
h_+
$(D) =$
(D_0)
D_0
0

L_0+
h_t
h_t
$\lambda_1(t), \dots, \lambda_n(t)$
0
$u_1(t), \dots, u_n(t)$
y
$D = ddt+(\ ) arrayc|cA(t)$

$\lambda(t)$

$\lambda(t) = (\ \lambda\ )_1\ (t) \quad \lambda_n(t)$

A
$\ker(D)$
$f \in$
$\ker(D)$
$f =$
$c_1 u_1+$
$\dots+$
$c_n u_n$
$c_1, \dots, c_n$
t
$f \in$
$\ker(D)$
${}_k(t)u_k(t))+$
$(L_0+$
$\underline{h_t})(c_k(t)u_k(t))$
$=$
$\overline{k} = 1ndc_kdt(t)u_k(t)+$
$c(t)dudt(t)+$
$c_k(t)\lambda_k(t)u_k(t).$
λ_i
u_i
h_t

h^*
h_t-
h_t^*
D
h_t

(s,t)
$\times S^1$
$D:$
$L^2_1(\times S^1, ^{2n}) L^2(\times S^1, ^{2n})$
$D = \partial \partial s + J_0 \partial \partial t + S,$

J_0
$2n$
$S =$
$S(s,t)$
$\partial S \partial s(s,t) = 0$

$|s| \gg$
1
$2n$
$\omega_{st} =$
$\langle \cdot, J_0 \cdot \rangle$
$Sp(2n)$
$sp(2n) \sim Symm$
$A \mapsto$
$J_0 A$
$S(s,t)$
t
$\Psi :$
$\times Sp(2n)$
$d\Psi dt = J_0 S \Psi and \Psi(s,0) = I.$

T
$\Psi(-s,t) =$
$\Psi(-T,t)$
$\Psi(s,t) =$
$\Psi(T,t)$
$s >$
T
$\Psi(-T,t)$
$\Psi(s,t)$
$\Psi(T,t)$
$\Psi(s,0) =$
I
$\Psi(s,1)$
$\gamma :$
$[0,1] Sp(2n)$
$\gamma(0) =$
I
1
$\gamma(1)$
$\mu_{CZ}(\gamma) \in$
$Sp^*(2n)$
1
$Sp(2n) \setminus$
$Sp^*(2n)$
$\bullet$
μ_{CZ}
γ
$Sp^*(2n)$
M
$\det(I-$
$M)$
$B_+ =$
$-I$

$B_- = (\,2\,) 12-1 \quad -1.$

γ
$\gamma(1) \in$
$Sp^*(2n)$
$\tilde\gamma$
$\tilde\gamma \setminus$
γ
$\tilde\gamma(1) =$
$B_\pm$
$U(n) =$
$Sp(2n) \cap$
$O(2n)$
$U(n)$
$Sp(2n)$
$\rho :$
$Sp(2n) U(n)$