??
$x(\mathbf{t})$
$x_3(\tau_1, \tau_2)$
(τ_1, τ_2)
$S' =$
$[-(N-$
$1), \cdots, N-$
$1] \times$
$[-(N-$
$1), \cdots, N-$
$1]$
(τ_1, τ_2)
$x(\mathbf{t})$
$x_3(\tau_1, \tau_2)$
$W(\tau_1, \tau_2)$
(τ_1, τ_2)
$K(\tau_1, \tau_2)$
$_1$
$W(\tau_1, \tau_2)$
$K(\tau_1, \tau_2)$
$C(\tau_1, \tau_2)$
$C(\tau_1, \tau_2)$
(τ_1, τ_2)
(τ_1, τ_2)
$(\tau_1{}', \tau_2{}')$
$C(\tau_1, \tau_2)$
$C(\tau_1{}', \tau_2{}')$
(τ_1, τ_2)
$(\tau_1{}', \tau_2{}')$
??
$C(\tau_1, \tau_2)$
τ_1
$\tau_1 =$
$[1, 0]$
τ_2
$S_0[1, 0] \times$
$[0, \infty]$
$C(\tau_1, \tau_2)$
$x(\mathbf{t})$
$C(\tau_1, \tau_2)$
$\tilde{x_3}(\rho, \phi; \tau_1, \tau_2) x_3(\mathbf{T}_{\beta,\phi}\tau_1, \mathbf{T}_{\beta,\phi}\tau_2)$

(1)

$\mathbf{T}_{\beta,\phi} = \beta \cos \phi - \sin \phi \sin \phi \cos \phi \rho = \log \beta$

(2)

$\rho\phi$
$C(\tau_1, \tau_2)$
β
ϕ
$y(\mathbf{t}) =$
$x(\mathbf{T}_{\alpha,\theta}\mathbf{t} +$
$\mathbf{t}_0)$
$C(\tau_1, \tau_2)$
$\tilde{y_3}(\rho, \phi; \tau_1, \tau_2) = \tilde{x_3}(\rho + \log \alpha, \phi + \theta; \tau_1, \tau_2)$

(3)

$\tilde{x_3}$
$\rho\phi$
$\tilde{X_3}(P, \Phi; \tau_1, \tau_2)$
$\tilde{X_3}(P, \Phi; \tau_1, \tau_2)$
$\tilde{X_3}(0, 0; \tau_1, \tau_2)$
(τ_1, τ_2)
$\tau_1 =$
$[\tau_{1x}, \tau_{1y}]$
$\tau_2 =$
$[\tau_{2x}, \tau_{2y}]$
$(\tau_1, \tau_2) =$
$(\tau_0, [k, l]), k \in$
$[0, 1], l \in$
$[0, \infty]$
$(\tau_1, \tau_2) =$
$(\tau_0, \tau_2) \rightarrow$
$(\theta_1, \theta_2), \theta_1, \theta_2 \in$
$[0, \pi 2]$
$(\tau_1, \tau_2) =$
$(\tau_0, \tau_2) \rightarrow$
$(\theta_1, \lambda), \theta_1 \in$
$[0, \pi 2], \lambda \in$
$[0, \infty]$
$\tau_0 =$
$(1, 0)$
θ_1, θ_2