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List of Notations

Symbols

\hbar Planck's constant divided by 2π , 2
 $\int_{\mathcal{H}}^{\Delta} e^{\frac{i}{2}(x,Bx)} f(x) dx$ Fresnel integral
 with respect to quadratic
 form Δ , or integral
 normalized with respect to
 Δ , 39
 $\int^{\sim} e^{\frac{i}{2}|x|^2} f(x) dx$, $\int_{\mathcal{H}}^{\sim} e^{\frac{i}{2}|x|^2} f(x) dx$
 normalized integral or
 Fresnel integral (on space
 \mathcal{H}), 10, 11
 $\int_{\mathcal{H}}^{\sim} e^{\frac{i}{2}\langle x,x \rangle} f(x) dx$ Fresnel or
 normalized integral on
 Banach space $(E, <, >)$, 47
 $\int_{\gamma(t)=x}^{\sim}$ "Feynman path integral"
 notation for certain Fresnel
 integrals over spaces of
 paths, 22, 23, 37, 51, 55, 58
 $\int_{t \rightarrow \pm\infty}^{\sim} \frac{\gamma(t)}{t} = V_{\pm}$ notation for certain
 (improper) Fresnel integrals
 of scattering theory, 33, 34
 $\int_{\mathbb{R}^n}^{\circ} e^{i\Phi(x)} f(x) dx$ oscillatory integral
 of f with respect to the
 phase function Φ , 94
 $\sigma \vee \tau = \max\{\sigma, \tau\}$, 21
 $\int_{\mathbb{R}^n}^{\circ} e^{\frac{i}{2\hbar}|x|^2} f(x) dx$ oscillatory integral
 of f with quadratic phase
 function, 94

$\widetilde{\int_{\mathcal{H}}^p} e^{\frac{i}{2\hbar}|x|^2} e^{-\frac{i}{2\hbar}(x,Lx)} f(x) dx$ class p
 normalized oscillatory
 integral of f with respect to
 the operator L , 98
 $\widetilde{\int_{\mathcal{H}}^{\circ}} e^{\frac{i}{2\hbar}|x|^2} f(x) dx$ infinite dimensional
 oscillatory integral of f on
 the Hilbert space \mathcal{H} , 95
 $\widetilde{\int_{\mathcal{H}}^B} e^{\frac{i}{2\hbar}(x,Bx)} f(x) dx$ normalized
 oscillatory integral of f
 with respect to the operator
 B , 96
 $s \wedge t = \min\{s, t\}$, 25

Letters

$C(\mathcal{H})$ (continuous bounded functions
 on \mathcal{H}), 40
 $\mathcal{M}(\mathbb{R}^n), \mathcal{M}(\mathcal{H})$ spaces of complex
 measures, 9, 11
 $\mathcal{S}(\mathbb{R}^n)$ Schwartz space, 2
 $\Phi(\vec{x}), \Phi(f)$ quantized time zero free
 field, 87
 \mathbb{R}^n Euclidean n dimensional space, 1
 $\mathcal{F}(\mathbb{R}^n), \mathcal{F}(\mathcal{H}), \mathcal{F}(D^*)$ space of Fresnel
 integrable functions, 11, 39
 $\mathcal{F}(f)$ Fresnel integral, 10, 12
 $\mathcal{F}_{\Delta}(f)$ Fresnel integral relative to
 quadratic form Δ , 40
 \mathcal{H} real separable Hilbert space, 11
 m particle mass, 1

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