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**David L. Skoug\*** ([dskoug@math.unl.edu](mailto:dskoug@math.unl.edu)), Department of Mathematics, 1144 T Street, 203 Avery Hall, Lincoln, NE 68588-0130. *Analytic Operator-Valued Feynman Integrals.*

Let  $\mathcal{C}_{a,b}[0, T]$  denote the general Wiener space where  $a(t)$  is an absolutely continuous function on  $[0, T]$  with  $a(0) = 0$ ,  $a'(t) \in L^2[0, T]$ , and where  $b(t)$  is a strictly increasing continuously differentiable function with  $b(0) = 0$  and  $b'(t) > 0$  for each  $t \in [0, T]$ . In this paper we study the operator-valued Feynman integral of functionals  $F$  on  $\mathcal{C}_{a,b}[0, T]$  of the form

$$F(x) = f \left( \int_0^T \theta_1(t) dx(t), \dots, \int_0^T \theta_n(t) dx(t) \right)$$

where  $\int_0^T \theta_j(t) dx(t)$  denotes the PWZ stochastic integral and  $\{\theta_1, \dots, \theta_n\}$  is an orthonormal set of functions of bounded variation in  $L^2_{a,b}[0, T]$ . (Received September 03, 2012)