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Generalized analytic Feynman integral via function space integral of bounded cylinder functionals. (English) [Zbl 1230.60084](#)

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The authors define for a generalized Brownian motion process [the first two authors and *D. Skoug*, Rocky Mt. J. Math. 40, No. 3, 761–788 (2010; [Zbl 1202.60133](#))] a generalized analytic Feynman integral. Then, they obtain some results for the analytic Feynman integral of bounded cylinder functionals, i.e., functionals of the form

$$F(x) = \widehat{\nu}((g_1, x)^\sim, \dots, (g_n, x)^\sim),$$

where $x \in C_{a,b}[0, T]$ and with orthonormal elements g_1, \dots, g_n from the dual $C'_{a,b}[0, T]$ [loc. cit.]. The paper also contains a change-of-scale formula for function space integrals of such cylinder functionals.

Reviewer: [René L. Schilling \(Dresden\)](#)

MSC:

[60J65](#) Brownian motion

[28C20](#) Set functions and measures and integrals in infinite-dimensional spaces
(Wiener measure, Gaussian measure, etc.)

Cited in 4 Documents

Keywords:

generalized Brownian motion; generalized analytic Feynman integral; function space integral; cylinder functional; change of scale formula

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