CONVERSE MEASURABILITY THEOREM AND CONDITIONAL YEH-WIENER INTEGRAL

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This thesis consists of two parts, one of which concerns with the converse measurability theorem for some Gaussian process and the other does the conditional Yeh-Wiener integral.

F. Koehler proved the converse measurability theorem for the Wiener process and D. L. Skoug obtained the Koehler's result for the Yeh-Wiener process.

In chapter 1, we make investigation on the converse measurability theorem for certain Gaussian process defined on the probabilistic complete metric space and the interval [a, b].

J. Yeh has recently introduced the concept of conditional Wiener integral on the Wiener measure space and he reported on three inversion formulae for conditional Wiener integrals. Furthermore, he obtained an analogue of the Cameron-Martin translation theorem for conditional Wiener integral and treated several examples of evaluation of conditional Wiener integrals.

In chapter 2, we verify the existence of conditional Yeh-Wiener integral and obtain three inversion formulae for conditional Yeh-Wiener integrals. Using these results, we deal with several examples of evaluation of conditional Yeh-Wiener integrals. In addition, we define the Paley-Wiener-Zygmund integral with two parameters and study some properties for it. We use these concepts to extend the second Yeh-Wiener integration formula, and obtain an analogue of the generalized Cameron-Martin translation theorem for conditional Yeh-Wiener integral.

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