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ON THE APPROXIMATION THEOREM OF THE WONG-ZAKAI TYPE FOR THE FUNCTIONAL STOCHASTIC DIFFERENTIAL EQUATIONS

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Abstract: In this paper we examine the generalization of the Wong-Zakai theorem for the nonlinear stochastic functional differential equations with values in the space R^d $(d \geq 1)$. As the result of the piecewise linear approximation of the m-dimensional Wiener process we obtain an explicit formula for the limit of a sequence of solutions to the ordinary differential equations with a delay argument; this very limit is a solution to the stochastic differential equation with a delay argument with the additional term called the *Itô correction term*.

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