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**Stochastic Dini's theorem and Wiener classes**

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The classical Itô-Nisio theorem states that the pointwise a.s. convergence on a compact metrizable set of a series of independent symmetric continuous processes to a continuous process implies the a.s. pathwise uniform convergence. This result can be viewed as a stochastic version of Dini's theorem of analysis.

However, one often needs to consider strong modes of convergence, which lead to a study of processes with paths in non-separable Banach spaces. In such situation, the classical Itô-Nisio theorem does not apply.

In this talk we will give a generalization of Itô-Nisio theorem to such spaces in the spirit that pointwise convergence implies convergence in norm. Then we will concentrate on Wiener classes that are non-separable subspaces of spaces of bounded  $\phi$ -variation, in which Lévy processes without Gaussian component live and the generalized Itô-Nisio theorem holds. Finally, we will mention the related extension of the celebrated result of S.J. Taylor on the exact Brownian path variation.