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On the uniqueness and convergence of successive approximations for a class of stochastic differential equations

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Abstract : A sufficient condition for uniqueness of solutions of stochastic differential equations driven by brownian motion is generalized in the case of a class of non-Lipschitz coefficient functions. Also, we show that, in the same conditions, the sequence of stochastic processes constructed by the successive approximations converges uniformly to solutions of a stochastic differential equations of Itô type. This result extends the Athanassov's results for ordinary differential equations.
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