A NONSTANDARD APPROACH TO THE SENSITIVITY ANALYSIS OF DIFFUSIONS

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Topic #5: *Nonstandard Methods in Measure Theory, Stochastic Analysis, Probability and Statistics.*
Also Topic #9: *Nonstandard Methods in Economics and Finance.*

We give a nonstandard approach to diffusion processes and their approximation within an internal setting. This approach does not use Loeb-measures, Nelsons translation algorithm or combinatorics. We further show that along the lines of this approach the sensitivity of diffusions can be investigated. The obtained sensitivity estimate is applied to an example from mathematical finance.

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