

## NONSTANDARD METHODS IN ANALYSIS

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The aim of this talk is to evidence two points relative to NSA:

- In most applications of NSA to analysis, only elementary facts and techniques of nonstandard calculus seems to be necessary.
- The advantages of a theory which includes infinitesimals rely more on the possibility of making new models rather than in proving techniques.

These two points will be illustrated in the theory of Brownian motion which can be considered as a classical model to test the power of the infinitesimal approach.

Starting from a naive idea of Brownian motion, we deduce the Fokker-Plank equation in a simple and rigorous way. It is possible to keep every things to a simple level since all the theory of stochastic differential equations is treated as a hyperfinite theory and it is not translated in a “standard model”. The only standard object is the final one: the Fokker-Plank equation.

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