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Autore	Cutland Nigel J
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the Internet: <http://www.springer.de>.

Sommario/riassunto

This expanded version of the 1997 European Mathematical Society Lectures given by the author in Helsinki, begins with a self-contained introduction to nonstandard analysis (NSA) and the construction of Loeb Measures, which are rich measures discovered in 1975 by Peter Loeb, using techniques from NSA. Subsequent chapters sketch a range of recent applications of Loeb measures due to the author and his collaborators, in such diverse fields as (stochastic) fluid mechanics, stochastic calculus of variations ("Malliavin" calculus) and the mathematical finance theory. The exposition is designed for a general audience, and no previous knowledge of either NSA or the various fields of applications is assumed.
