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| Soggetti | Probabilities<br>Functional analysis<br>Geometry, Differential<br>Global analysis (Mathematics)<br>Manifolds (Mathematics)<br>Probability Theory<br>Functional Analysis<br>Differential Geometry<br>Global Analysis and Analysis on Manifolds |
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| Nota di contenuto | Construction of connections -- The infinitesimal generators and associated operators -- Decomposition of noise and filtering -- Application: Analysis on spaces of paths -- Stability of stochastic dynamical systems -- Appendices. |
| Sommario/riassunto | Stochastic differential equations, and Hoermander form representations of diffusion operators, can determine a linear connection associated to the underlying (sub)-Riemannian structure. This is systematically described, together with its invariants, and then exploited to discuss qualitative properties of stochastic flows, and analysis on path spaces of compact manifolds with diffusion measures. This should be useful to stochastic analysts, especially those with interests in stochastic flows, |

infinite dimensional analysis, or geometric analysis, and also to researchers in sub-Riemannian geometry. A basic background in differential geometry is assumed, but the construction of the connections is very direct and itself gives an intuitive and concrete introduction. Knowledge of stochastic analysis is also assumed for later chapters.