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Titolo	Aspects of Integrability of Differential Systems and Fields : A Mathematical Primer for Physicists // by Costas J. Papachristou
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Nota di contenuto	Integrability on the plane and in space -- Integrability on the complex plane -- Ordinary differential equations -- Systems of ordinary differential equations -- Differential systems: Geometric viewpoint -- Integrable systems of partial differential equations.
Sommario/riassunto	This book serves as an introduction to the concept of integrability as it applies to systems of differential equations as well as to vector-valued fields. The author focuses on specific aspects of integrability that are often encountered in a variety of problems in applied mathematics, physics and engineering. The following general cases of integrability are examined: (a) path-independence of line integrals of vector fields on the plane and in space; (b) integration of a system of ordinary differential equations by using first integrals; and (c) integrable systems of partial differential equations. Special topics include the integration of analytic functions and some elements from the geometric theory of differential systems. Certain more advanced subjects, such as

Lax pairs and Bäcklund transformations, are also discussed. The book is written at an intermediate level for educational purposes. The presentation is as simple as the topics allow, often sacrificing mathematical rigor in favor of pedagogical efficiency.
