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Disciplina	510
Soggetti	Mathematics Mathematical analysis Calculus Partial differential equations Computer mathematics Algebraic geometry Mathematics, general Analysis Partial Differential Equations Computational Mathematics and Numerical Analysis Algebraic Geometry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	1 F. Guerra: Interpolation and comparison methods in the mean field spin glass model -- 2 A. De Sole, V.G. Kac, D. Valeri: Integrability of dirac reduced Bi-Hamiltonian equations -- 3 W. Luck: Some open problems about aspherical closed manifolds abstract -- 4 P. Etingof: Exploring noncommutative algebras via deformation theory -- 5 G. Lancia: Mathematical models and solutions for the analysis of human genotypes -- 6 M. Manetti: Kodaira-Spencer formality of products of complex manifolds -- 7 O. Debarre, B. Lass: Monomial transformations of the projective space -- 8 J.L. Vazquez: Progress in the theory of nonlinear diffusion. Asymptotics via entropy methods -- 9 E. Hairer: Challenges in geometrical numerical integration -- 10 C. Voisin: Integral hodge classes, decompositions of the diagonal and rationality

questions -- 11 U. Zannier: Unlikely intersections and Pell's equations in polynomials -- 12 P. Cascini: Birational geometry of projective varieties and directed graphs -- 13 I. Reiten: Dynkin and extended Dynkin diagrams -- 14 R. Lecaros, E. Zuazua: Tracking control of 1D scalar conservation laws in the presence of shocks -- 15 A. Beauville: Finite simple groups of small essential dimension -- 16 C. Arezzo: Geometric constructions of extremal metrics on complex manifolds -- 17 L. Saint-Raymond: Deriving Ohm's law from the Vlasov-Maxwell-Boltzmann system -- 18 T.P. Liu: Kinetic theory and gas dynamics, some historical perspectives -- 19 G. Mingione: Recent advances in nonlinear potential theory -- 20 G. De Philippis, A. Figalli: Partial regularity results in optimal transportation.

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## Sommario/riassunto

This book covers a wide spectrum of hot topics and current trends in mathematics, including noncommutative algebra via deformation theory, optimal transportation, nonlinear potential theory, kinetic theory and gas dynamics, geometric numerical integration, finite simple groups of small essential dimension, optimal control problems, extended Dynkin diagrams, spin glasses, aspherical closed manifolds, Boltzmann systems, birational geometry of projective varieties and directed graphs, nonlinear diffusion, geometric constructions of extremal metrics on complex manifolds, and Pell's equation in polynomials. The book comprises a selection of contributions by leading international mathematicians who were speakers at the "INdAM Day", an initiative dating back to 2004 at which the most recent developments in contemporary mathematics are presented.

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