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Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	1 On Friedrichs commutators lemma for Hardy spaces and applications. Jorge Hounie -- 2 On the Hardy constant of some non-convex planar domains. Gerassimos Barbatis and Achilles Tertikas -- 3 Sharp singular Trudinger-Moser-Adams type inequalities with exact growth. Nguyen Lam and Guozhen Lu. 4 A Quantitative Lusin Theorem for Functions in BV. András Telcs and Vincenzo Vespri -- 5 X-Elliptic Harmonic Maps. Sorin Dragomir -- 6 Sum operators and Fefferman - Phong inequalities. Giuseppe Di Fazio, Maria Stella Fanciullo, Pietro Zamboni -- 7 Lp-parabolic regularity and non-degenerate Ornstein-Uhlenbeck type

Operators. Enrico Priola -- 8 Local solvability of nonsmooth Hörmander's operators. Marco Bramanti -- 9 Multiple solutions for an eigenvalue problem involving non–local elliptic p–Laplacian operators. Patrizia Pucci and Sara Saldi -- 10 Uniqueness of solutions of a class of quasilinear subelliptic equations. Lorenzo D'Ambrosio and Enzo Mitidieri -- 11 Liouville type theorems for non-linear differential inequalities on Carnot groups. Luca Brandolini and Marco Magliaro -- 12 Modica type gradient estimates for reaction-diffusion equations. Agnid Banerjee and Nicola Garofalo -- 13 A few recent results on fully nonlinear pde's. Italo Capuzzo Dolcetta -- 14 Hölder regularity of the gradient for solutions of fully nonlinear equations with sub linear first order term. Isabeau Birindelli and Francoise Demengel -- 15 The Reflector Problem and the inverse square law. Cristian E. Gutiérrez and Ahmad Sabra -- 16 Gagliardo-Nirenberg inequalities for horizontal vector fields in the Engel group and in the 7-dimensional quaternionic Heisenberg group. Annalisa Baldi, Bruno Franchi and Francesca Tripaldi -- 17 Regularity of the free boundary in problems with distributed sources. Daniela De Silva, Fausto Ferrari, Sandro Salsa -- 18 The role of fundamental solution in Potential and Regularity Theory for subelliptic PDE. Andrea Bonfiglioli, Giovanna Citti, Giovanni Cupini, MariaManfredini, Annamaria Montanari, Daniele Morbidelli, Andrea Pascucci, Sergio Polidoro, Francesco Uguzzoni.

Sommario/riassunto

The analysis of PDEs is a prominent discipline in mathematics research, both in terms of its theoretical aspects and its relevance in applications. In recent years, the geometric properties of linear and nonlinear second order PDEs of elliptic and parabolic type have been extensively studied by many outstanding researchers. This book collects contributions from a selected group of leading experts who took part in the INdAM meeting "Geometric methods in PDEs", on the occasion of the 70th birthday of Ermanno Lanconelli. They describe a number of new achievements and/or the state of the art in their discipline of research, providing readers an overview of recent progress and future research trends in PDEs. In particular, the volume collects significant results for sub-elliptic equations, potential theory and diffusion equations, with an emphasis on comparing different methodologies and on their implications for theory and applications. .