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Nota di contenuto	A Global Version of the Koon-Marsden Jacobiator Formula (P. Balsiero) -- Geometry of Image Registration (M. Bruveris, D.D. Holm) -- Multisymplectic Geometry and Lie Groupoids (H. Bursztyn, A. Cabrera, D. Iglesias) -- The Topology of Change (G. Chichilnisky) -- Chaos in the Kepler Problem with Quadrupole Perturbations (G. Depetri, A. Saa) -- Groups of Diffeomorphisms and Fluid Motion (D.G. Ebin) -- Dual Pairs For Non-Abelian Fluids (F. Gay-Balmaz) -- The Role of SE(d)-Reduction For Swimming in Stokes and Navier-Stokes Fluids (H.O. Jacobs) -- Lagrangian Mechanics on Centered Semi-Direct Products (L. Colombo, H.O. Jacobs) -- Vortices on Closed Surfaces (S. Boatto, J. Koiller) -- The Geometry of Radiative Transfer (C. Lessig, A.L. Castro) -- A Soothing Invisible Hand: Moderation Potentials in Optimal Control (D. Lewis) -- The Local Description of Discrete Mechanics (J.C. Marrero,

D. Martin de Diego, E. Martinez) -- Keplerian Dynamics on the Heisenberg Group and Elsewhere (R. Montgomery, C. Shanbrom) -- On the Completeness of Trajectories for Some Mechanical Systems (M. Sanchez) -- Diffeomorphic Image Matching with Left-Invariant Metrics (T. Schmah, L. Risser, F.-X. Vialard) -- Normal Forms for Lie Symmetric Cotangent Bundle Systems with Free and Proper Actions (T. Schmah, C. Stoica) -- Polite Actions of Non-Compact Lie Groups (L. Bates, J. Sniaticki) -- Geometric Computational Electrodynamics with Variational Integrators and Discrete Differential Forms (A. Stern, Y. Tong, M. Desbrun, J.E. Marsden) -- Hamel's Formalism and Variational Integrators (K.R. Ball, D.V. Zenkov).

| Sommario/riassunto | This book illustrates the broad range of Jerry Marsden's mathematical legacy in areas of geometry, mechanics, and dynamics, from very pure mathematics to very applied, but always with a geometric perspective. Each contribution develops its material from the viewpoint of geometric mechanics beginning at the very foundations, introducing readers to modern issues via illustrations in a wide range of topics. The twenty refereed papers contained in this volume are based on lectures and research performed during the month of July 2012 at the Fields Institute for Research in Mathematical Sciences, in a program in honor of Marsden's legacy. The unified treatment of the wide breadth of topics treated in this book will be of interest to both experts and novices in geometric mechanics. Experts will recognize applications of their own familiar concepts and methods in a wide variety of fields, some of which they may never have approached from a geometric viewpoint. Novices may choose topics that interest them among the various fields and learn about geometric approaches and perspectives toward those topics that will be new for them as well. |