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	Titolo	Symplectic 4-Manifolds and Algebraic Surfaces [[electronic resource]] : Lectures given at the C.I.M.E. Summer School held in Cetraro, Italy, September 2-10, 2003 / / by Denis Auroux, Fabrizio Catanese, Marco Manetti, Paul Seidel, Bernd Siebert, Ivan Smith, Gang Tian ; edited by Fabrizio Catanese, Gang Tian
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	Soggetti	Algebraic geometry
		Differential geometry
		Functions of complex variables
		Group theory
		Manifolds (Mathematics)
		Complex manifolds
		Algebraic Geometry
		Differential Geometry
		Several Complex Variables and Analytic Spaces
		Group Theory and Generalizations
		Manifolds and Cell Complexes (incl. Diff.Topology)
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	Nota di bibliografia	Includes bibliographical references.
	Nota di contenuto	Lefschetz Pencils, Branched Covers and Symplectic Invariants -- Differentiable and Deformation Type of Algebraic Surfaces, Real and Symplectic Structures -- Smoothings of Singularities and Deformation Types of Surfaces -- Lectures on Four-Dimensional Dehn Twists -- Lectures on Pseudo-Holomorphic Curves and the Symplectic Isotopy Problem.
	Sommario/riassunto	Modern approaches to the study of symplectic 4-manifolds and algebraic surfaces combine a wide range of techniques and sources of

inspiration. Gauge theory, symplectic geometry, pseudoholomorphic curves, singularity theory, moduli spaces, braid groups, monodromy, in addition to classical topology and algebraic geometry, combine to make this one of the most vibrant and active areas of research in mathematics. It is our hope that the five lectures of the present volume given at the C.I.M.E. Summer School held in Cetraro, Italy, September 2-10, 2003 will be useful to people working in related areas of mathematics and will become standard references on these topics. The volume is a coherent exposition of an active field of current research focusing on the introduction of new methods for the study of moduli spaces of complex structures on algebraic surfaces, and for the investigation of symplectic topology in dimension 4 and higher.