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Titolo	Contact Mechanics of Articular Cartilage Layers : Asymptotic Models / / by Ivan Argatov, Gennady Mishuris
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Deformation of a thin elastic layer -- Deformation of a thin biphasic layer -- Axisymmetric contact of thin biphasic layers -- Non-axisymmetric contact of thin layers -- Articular contact mechanics -- Sensitivity analysis of articular contact mechanics.
Sommario/riassunto	This book presents a comprehensive and unifying approach to articular contact mechanics with an emphasis on frictionless contact interaction of thin cartilage layers. The first part of the book (Chapters 1–4) reviews the results of asymptotic analysis of the deformational behavior of thin elastic and viscoelastic layers. A comprehensive review of the literature is combined with the authors' original contributions. The compressible and incompressible cases are treated separately with a focus on exact solutions for asymptotic models of frictionless contact for thin transversely isotropic layers bonded to rigid substrates shaped like elliptic paraboloids. The second part (Chapters 5, 6, and 7) deals with the non-axisymmetric contact of thin transversely isotropic biphasic layers and presents the asymptotic modelling methodology for tibio-femoral contact. The third part of the book consists of Chapter 8,

which covers contact problems for thin bonded inhomogeneous transversely isotropic elastic layers, and Chapter 9, which addresses various perturbational aspects in contact problems and introduces the sensitivity of articular contact mechanics. This book is intended for advanced undergraduate and graduate students, researchers in the area of biomechanics, and engineers interested and involved in the analysis and design of thin-layer structures.