1. Record Nr. UNINA9910460446003321

Autore	Konyukhov Alexander
Titolo	Introduction to computational contact mechanics : a geometrical approach / / Alexander Konyukhov, Ridvan Izi
Pubbl/distr/stampa	Chichester, England : , : Wiley, , 2015 ©2015
ISBN	1-118-77064-1 1-118-77063-3
Descrizione fisica	1 online resource (305 p.)
Collana	Wiley Series in Computational Mechanics
Disciplina	620.1/05
Soggetti	Contact mechanics Mechanics, Applied Electronic books.
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 and index.
Nota di contenuto	Cover; Title Page; Copyright; Contents; Series Preface; Preface; Acknowledgments; Part I Theory; Chapter 1 Introduction with a Spring-Mass Frictionless Contact System; 1.1 Structural Part-Deflection of Spring-Mass System; 1.2 Contact Part-Non-Penetration into Rigid Plane; 1.3 Contact Formulations; 1.3.1 Lagrange Multiplier Method; 1.3.2 Penalty Method; 1.3.3 Augmented Lagrangian Method; Chapter 2 General Formulation of a Contact Problem; 2.1 Structural Part-Formulation of a Problem in Linear Elasticity; 2.1.1 Strong Formulation of Equilibrium; 2.1.2 Weak Formulation of Equilibrium 2.2 Formulation of the Contact Part (Signorini's problem)Chapter 3 Differential Geometry; 3.1 Curve and its Properties; 3.1.1 Example: Circle and its Properties; 3.2 Frenet Formulas in 2D; 3.3 Description of Surfaces by Gauss Coordinates; 3.3.1 Tangent and Normal Vectors: Surface Coordinate System; 3.3.2 Basis Vectors: Metric Tensor and its Applications; 3.3.3 Relationships between Co- and Contravariant Basis Vectors; 3.3.4 Co- and Contravariant Representation of a Vector on a Surface; 3.3.5 Curvature Tensor and Structure of the Surface; 3.4 Differential Properties of Surfaces 3.4.1 The Weingarten Formula3.4.2 The Gauss-Codazzi Formula; 3.4.3

Covariant Derivatives on the Surface; 3.4.4 Example: Geometrical Analysis of a Cylindrical Surface; Chapter 4 Geometry and Kinematics for an Arbitrary Two Body Contact Problem; 4.1 Local Coordinate System; 4.2 Closest Point Projection (CPP) Procedure-Analysis; 4.2.1 Existence and Uniqueness of CPP Procedure; 4.2.2 Numerical Solution of CPP Procedure in 2D; 4.2.3 Numerical Solution of CPP Procedure in 3D; 4.3 Contact Kinematics; 4.3.1 2D Contact Kinematics using Natural Coordinates s and
4.3.2 Contact Kinematics in 3D Coordinate SystemChapter 5 Abstract Form of Formulations in Computational Mechanics; 5.1 Operator Necessary for the Abstract Formulation; 5.1.1 Examples of Operators in Mechanics; 5.1.2 Examples of Various Problems; 5.2 Abstract Form of the Iterative Method; 5.3 Fixed Point Theorem (Banach); 5.4 Newton Iterative Solution Method; 5.4.1 Geometrical Interpretation of the Newton Iterative Method; 5.5 Abstract Form for Contact Formulations; 5.5.1 Lagrange Multiplier Method in Operator Form; 5.5.2 Penalty Method in Operator Form
Chapter 6 Weak Formulation and Consistent Linearization6.1 Weak Formulation in the Local Coordinate System; 6.2 Regularization with Penalty Method; 6.3 Consistent Linearization; 6.3.1 Linearization of Normal Part; 6.4 Application to Lagrange Multipliers and to Following Forces; 6.4.1 Linearization for the Lagrange Multipliers Method; 6.4.2 Linearization for Following Forces: Normal Force or Pressure; 6.5 Linearization of the Convective Variation ; 6.6 Nitsche Method; 6.6.1 Example: Independence of the Stabilization Parameter; Chapter 7 Finite Element Discretization
7.1 Computation of the Contact Integral for Various Contact Approaches

Sommario/riassunto

Introduction to Computational Contact Mechanics: A Geometrical Approach covers the fundamentals of computational contact mechanics and focuses on its practical implementation. Part one of this textbook focuses on the underlying theory and covers essential information about differential geometry and mathematical methods which are necessary to build the computational algorithm independently from other courses in mechanics. The geometrically exact theory for the computational contact mechanics is described in step-by-step manner, using examples of strict derivation from a mathematical point of vi

2. Record Nr. UNISA996466208503316

Titolo	Automated Technology for Verification and Analysis [[electronic resource]] : 10th International Symposium, ATVA 2012, Thiruvananthapuram, India, October 3-6, 2012, Proceedings / / edited by Madhavan Mukund, Supratik Chakraborty
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2012
ISBN	3-642-33386-9
Edizione	[1st ed. 2012.]
Descrizione fisica	1 online resource (XIV, 438 p. 106 illus.)
Collana	Programming and Software Engineering ; ; 7561
Disciplina	006.3
Soggetti	Software engineering Computer programming Computer communication systems Computer logic Programming languages (Electronic computers) Software Engineering Programming Techniques Computer Communication Networks Logics and Meanings of Programs Programming Languages, Compilers, Interpreters Software Engineering/Programming and Operating Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	International conference proceedings.
Nota di bibliografia	Includes bibliographical references and author index.
Sommario/riassunto	This book constitutes the thoroughly refereed proceedings of the 10th International Symposium on Automated Technology for Verification and Analysis, ATVA 2012, held at Thiruvananthapuram, Kerala, India, in October 2012. The 25 regular papers, 3 invited papers and 4 tool papers presented were carefully selected from numerous submissions. Conference papers are organized in 9 technical sessions, covering the topics of automata theory, logics and proofs, model checking, software verification, synthesis, verification and parallelism, probabilistic

		verification, constraint solving and applications, and probabilistic systems.

3.	Record Nr.	UNINA9910231245803321
	Autore	Ahbe Stephan
	Titolo	The Ecological Scarcity Method for the European Union [[electronic resource]] : A Volkswagen Research Initiative: Environmental Assessments / / by Stephan Ahbe, Simon Weihofen, Steffen Wellge
	Pubbl/distr/stampa	Cham, : Springer Nature, 2017 Wiesbaden : , : Springer Fachmedien Wiesbaden : , : Imprint : Springer, , 2018
	ISBN	3-658-19506-1
	Edizione	[1st ed. 2018.]
	Descrizione fisica	1 online resource (XIV, 93 p. 5 illus.)
	Collana	AutoUni – Schriftenreihe, , 1867-3635 ; ; 105
	Disciplina	333.7
	Soggetti	Environmental management Sustainable development Pollution prevention Environmental Management Sustainable Development Industrial Pollution Prevention
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di contenuto	Intro -- Acknowledgement -- Preliminary Remarks -- Table of Contents -- Table of Figures and Tables -- 1 Management Summary -- 2 Introduction -- 2.1 Method Description -- 2.2 Initial Situation and Aim of the Initiative -- 2.3 Objectives for European Data -- 2.4 Project Implementation -- 3 Methodological Bases -- 3.1 Ecological Scarcity Method -- 3.1.1 How does the ESM fit to the Phases of the ISO Standard? -- 3.1.2 What are the Elements of the ESM? -- 3.2 Basic Principle -- 3.2.1 How can the ESM be applied? -- 3.2.2 Which Requirement apply to the ESM and its underlying Data? -- 3.2.3 Coordination with Environmental Authorities -- 3.2.4 Requirements for European Eco Factors -- 3.3 Method -- 3.3.1 Requirements for

European Eco Factors -- 3.3.2 What further Options are there for Applying the ESM? -- 3.3.3 How can Traceability be communicated? -- 3.3.4 What Transparency Rules need to be observed? -- 3.3.5 Basis for Assessment -- 3.3.6 Rules for Assessment -- 3.3.7 What must be borne in Mind when drawing up Assessment? -- 3.4 Methods -- 3.4.1 The ESM: Midpoint or Endpoint Method? -- 3.4.2 Does the ESM comply with ISO 14040:2006 and 14044:2006? -- 3.5 Responsible Use of Environmental Impact Assessments -- 3.6 Use of Data -- 3.6.1 Types of Impact under Consideration -- 3.6.2 Comparability of Eco Factors and Eco Points -- 4 Data Collection -- 4.1 Methodology -- 4.2 Principles for Deriving Eco Factors -- 4.3 Use for Characterization Factors -- 4.3.1 Determination of Normalisation -- 4.3.2 Determination of Weighting -- 4.3.3 Eco-Factor Determination -- 4.3.4 Temporal Aspects of the Eco-Factor Dermination/ Time Horizons -- 4.4 General Data Situation -- 4.4.1 Reccording the Actual State -- 4.4.2 Articulating Political Will -- 4.4.3 Discussion of Procedure -- 5 Results Type of Impact -- 5.1 Emission to Air -- 5.1.1 Greenhouse Gases -- 5.1.2 Characterization.
5.1.3 Preliminary Remarks on Air Pollutants -- 5.1.4 NMVOC -- 5.1.5 NO -- 5.1.6 SO -- 5.1.7 PM2.5 -- 5.1.8 NH -- 5.2 Emissions Surface Water -- 5.2.1 Nitrogen (as N) -- 5.2.2 Phosphorus (as P) -- 5.2.3 Nickel -- 5.2.4 Zinc -- 5.2.5 COD -- 5.2.6 Lead -- 5.2.7 Cadmium -- 5.2.8 Copper -- 5.2.9 EPA-PAH16 -- 5.3 Consumption of Resources -- 5.3.1 Freshwater Consumption -- 5.3.2 Primary and Renewable Energy Consumption -- 5.4 Waste Generation -- 5.4.1 Non-Hazardous and Hazardous Waste -- 5.5 Derived Data Sets for Individual EU Countries -- 5.5.1 References to Calculation in the Datasheets -- 6 Eco Factors for EU-28 and Member States -- 6.1 EU-28 (Regarded as one Environmentally Decision-Making Unit) -- 6.2 Data sets of the EU Member States -- 6.2.1 Austria -- 6.2.2 Belgium -- 6.2.3 Bulgaria -- 6.2.4 Croatia -- 6.2.5 Cyprus -- 6.2.6 Czech. Republik -- 6.2.7 Denmark -- 6.2.8 Estonia -- 6.2.9 Finland -- 6.2.10 France -- 6.2.11 Germany (for the purpose of comparision) -- 6.2.12 Greece -- 6.2.13 Hungary -- 6.2.14 Ireland -- 6.2.15 Italy -- 6.2.16 Latvia -- 6.2.17 Lithuania -- 6.2.18 Luxembourg -- 6.2.19 Malta -- 6.2.20 Netherlands -- 6.2.21 Poland -- 6.2.22 Portugal -- 6.2.23 Romania -- 6.2.24 Slovakia -- 6.2.25 Slovenia -- 6.2.26 Spain -- 6.2.27 Sweden -- 6.2.28 United Kingdom -- 7 Environmental Impact Calculation -- 8 Sources.

Sommario/riassunto

This book is published open access under a CC BY 4.0 license. This report transfers the Ecological Scarcity Method (ESM) to the EU and its 28 member states. It provides a powerful tool for unbiased environmental assessments in enterprises and surveys the current impacts and the targets published by environmental authorities, specifically the European Environment Agency. ESM assesses environmental impacts of manufacturing sites and production processes. Developed in 1990 in Switzerland, ESM has already gained regulatory status in proving entitlements for tax exemptions. The method assesses all important impacts in air, water, energy consumption, waste generation and freshwater consumption and also supports en vironmental investment decisions. Contents Methodological Basics Data Research and Results Eco Factors for EU28 Target Groups Practitioners in industries and public authorities in the field of Environment Researchers and students of Ecological Sciences and Industrial Management About the Authors Dr. Stephan Ahbe is initiator and author of Swiss Ecological Scarcity Method published in 1990 and today develops Environmental Management Systems at SYRCON in Darmstadt, Germany. Dr. Simon Weihofen is Environmental and Energy Manager in Group Management at E.ON SE in Essen,

Germany. Dr. Steffen Wellge is an Environmental and Energy Management Specialist at the Volkswagen Group Research, Wolfsburg, Germany.