1. Record Nr. UNINA9910830341303321

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Titolo	Differential geometry [[electronic resource] /] / [by] J. J. Stoker
Pubbl/distr/stampa	New York, : Wiley-Interscience, 1989, c1969
ISBN	1-283-27398-5 9786613273987 1-118-16546-2 1-118-16547-0
Descrizione fisica	1 online resource (428 p.)
Collana	Pure and applied mathematics, v. 20
Disciplina	516 516.7
Soggetti	Geometry, Differential Manifolds (Mathematics)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"Wiley classics edition published in 1989."
Nota di bibliografia	Includes bibliographical references (p. 396-399) and index.
Nota di contenuto	Differential Geometry; CONTENTS; Chapter I Operations with Vectors; 1. The vector notation; 2. Addition of vectors; 3. Multiplication by scalars; 4. Representation of a vector by means of linearly independent vectors; 5. Scalar product; 6. Vector product; 7. Scalar triple product; 8. Invariance under orthogonal transformations; 9. Vector calculus; Chapter II Plane Curves; 1. Introduction; 2. Regular curves; 3. Change of parameters; 4. Invariance under changes of parameter; 5. Tangent lines and tangent vectors of a curve; 6. Orientation of a curve; 7. Length of a curve 1. Regular curves2. Length of a curve; 3. Curvature of space curves; 4. Principal normal and osculating plane; 5. Binormal vector; 6. Torsion of a space curve; 7. The Frenet equations for space curves; 8. Rigid body motions and the rotation vector; 9. The Darboux vector; 10. Formulas for and ; 11. The sign of ; 12. Canonical representation of a curve; 13. Existence and uniqueness of a space curve for given (S), (S); 14. What about = 0?; 15. Another way to define space curves; 16. Some special curves; Chapter IV The Basic Elements of Surface Theory 1. Regular surfaces in Euclidean space2. Change of parameters; 3. Curvilinear coordinate curves on a surface; 4. Tangent plane and

normal vector; 5. Length of curves and first fundamental form; 6. Invariance of the first fundamental form; 7. Angle measurement on surfaces; 8. Area of a surface; 9. A few examples; 10. Second fundamental form of a surface; 11. Osculating paraboloid; 12. Curvature of curves on a surface; 13. Principal directions and principal curvatures; 14. Mean curvature H and Gaussian curvature K; 15. Another definition of the Gaussian curvature K; 16. Lines of curvature 17. Third fundamental form18. Characterization of the sphere as a locus of umbilical points; 19. Asymptotic lines; 20. Torsion of asymptotic lines; 21. Introduction of special parameter curves; 22. Asymptotic lines and lines of curvature as parameter curves; 23. Embedding a given arc in a system of parameter curves; 24. Analogues of polar coordinates on a surface; Chapter V Some Special Surfaces; 1. Surfaces of revolution; 2. Developable surfaces in the small made up of parabolic points; 3. Edge of regression of a developable; 4. Why the name developable?
5. Developable surfaces in the large1

Sommario/riassunto

This classic work is now available in an unabridged paperback edition. Stoker makes this fertile branch of mathematics accessible to the nonspecialist by the use of three different notations: vector algebra and calculus, tensor calculus, and the notation devised by Cartan, which employs invariant differential forms as elements in an algebra due to Grassman, combined with an operation called exterior differentiation. Assumed are a passing acquaintance with linear algebra and the basic elements of analysis.