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Nota di contenuto	Part 1. Part Surfaces -- Geometry of a Part Surface -- On a Possibility of Classification of Part Surfaces -- Part 2. On a Possibility of Classification of Part Surfaces -- Early Works in the Field of Contact Geometry of Surfaces -- An Analytical Method based on Second Fundamental Forms of the Contacting Part Surfaces -- Indicatrix of Conformity at Point of Contact of Two Smooth Regular Part Surfaces in the First Order of Tangency -- Plücker Conoid: More Characteristic Curves -- Possible Kinds of Contact of Two Smooth Regular Part Surfaces in the First Order of Tangency -- Part 3. Mapping of Contacting Part Surfaces -- -Mapping of Interacting Part Surfaces -- Generation of Enveloping Surfaces: General Consideration -- Generation of Enveloping Surfaces: Special Cases -- Conclusion --

Appendix A: Elements of Vector Calculus -- Appendix B: Elements of Coordinate Systems Transformations -- Appendix C: Change of Surface Parameters -- Appendix D: Closest Distance of Approach between Two Part Surfaces.

Sommario/riassunto

This updated and expanded edition presents a highly accurate specification for part surface machining. Precise specification reduces the cost of this widely used industrial operation as accurately specified and machined part surfaces do not need to undergo costly final finishing. Dr. Radzevich describes techniques in this volume based primarily on classical differential geometry of surfaces. He then transitions from differential geometry of surfaces to engineering geometry of surfaces, and examines how part surfaces are either machined themselves, or are produced by tools with surfaces that are precisely machined. The book goes on to explain specific methods, such as derivation of planar characteristic curves based on Plücker conoid constructed at a point of the part surface, and that analytical description of part surface is vital for surfaces machined using CNC technology, and especially so for multi-axes NC machines. Providing readers with a powerful tool for analytical description of part surfaces machined on conventional machine tools and numerically controlled machines, this book maximizes understanding on optimal treatment of part surfaces to meet the requirements of today’s high tech industry. Expands explanation of reversibly-enveloping surfaces (RES), proposing a qualitative (analytical) approach of RES in this new edition; Provides an analytical description of part surfaces to be machined and elucidates the principal difference between differential geometry of surfaces and the engineering of part surfaces; Focuses the readers’ attention on circular diagrams, simple but powerful analytic constructs, erected at a point of a part surface ; Illustrates a practical means of mapping of one part surface onto another part surface, with emphasis on a newly developed -Mapping of part surfaces.