

1. Record Nr.	UNINA9910299924503321
Titolo	Thermal Effects in Complex Machining Processes : Final Report of the DFG Priority Programme 1480 // edited by D Biermann, F Hollmann
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2018
ISBN	3-319-57120-6
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (VI, 403 p. 280 illus., 247 illus. in color.)
Collana	Lecture Notes in Production Engineering, , 2194-0525
Disciplina	670
Soggetti	Manufactures Mathematical models Computer simulation Manufacturing, Machines, Tools, Processes Mathematical Modeling and Industrial Mathematics Simulation and Modeling
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction -- Temperature Measurements and Heat Partitioning in Machining Processes -- Report of the Working Group on Temperature Metrology -- Improvement of the Machining Accuracy in Dry Turning of Aluminum Metal Matrix Composites via Experiments and Finite Element Simulations -- Modelling and Compensation of Thermoelastic Workpiece Deformation in Dry Cutting -- Thermo-mechanical simulation of hard turning with macroscopic models -- Modeling of Orthogonal Metal Cutting Using Adaptive Smoothed Particle Hydrodynamics -- Experimental and simulative modeling of drilling processes for the compensation of thermal effects -- Thermomechanical Deformation of Complex Workpieces in Milling and Drilling Processes -- Compensation Strategies for Thermal Effects in Dry Milling -- Modeling, Simulation and Compensation of Thermomechanically Induced Material Deformation in Dry NC Milling Processes -- Coupling analytical and numerical models to simulate thermomechanical interaction during the milling process of thin-walled workpieces -- Modeling, simulation and compensation of thermal

effects in gear hobbing -- Modelling and Simulation of Internal Traverse Grinding – from Micro-thermo-mechanical Mechanisms to Process Models.

Sommario/riassunto

This contributed volume contains the research results of the priority programme (PP) 1480 "Modelling, Simulation and Compensation of Thermal Effects for Complex Machining Processes", funded by the German Research Society (DFG). The topical focus of this programme is the simulation-based prediction and compensation of thermally induced workpiece deviations and subsurface damage effects. The approach to the topic is genuinely interdisciplinary, covering all relevant machining operations such as turning, milling, drilling and grinding. The target audience primarily comprises research experts and practitioners in the field of production engineering, but the book may also be beneficial for graduate students.
