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	Titolo	Introduction to Geometrically Nonlinear Continuum Dislocation Theory : FE Implementation and Application on Subgrain Formation in Cubic Single Crystals Under Large Strains / / by Christian B. Silbermann, Matthias Baitsch, Jörn Ihlemann
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	Nota di contenuto	Introduction -- Nonlinear kinematics of a continuously dislocated crystal -- Crystal kinetics and -thermodynamics -- Special cases included in the theory -- Geometrical linearization of the theory -- Variational formulation of the theory -- Numerical solution with the finite element method -- FE simulation results -- Possibilities of experimental validation -- Conclusions and Discussion -- Elements of Tensor Calculus and Tensor Analysis -- Solutions and algorithms for nonlinear plasticity.
	Sommario/riassunto	This book provides an introduction to geometrically non-linear single crystal plasticity with continuously distributed dislocations. A symbolic tensor notation is used to focus on the physics. The book also shows the implementation of the theory into the finite element method. Moreover, a simple simulation example demonstrates the capability of the theory to describe the emergence of planar lattice defects (subgrain boundaries) and introduces characteristics of pattern forming systems. Numerical challenges involved in the localization phenomena are