1.

Record Nr.	UNINA990002113020403321
Autore	Hobbs, Jill
Titolo	The trasformation of the Agrifood System incentral and Eastern Europe and the New Independent States / Jill E. Hobbs, William A. Kerr and James D. Gaisford
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2.

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Autore	Jebahi Mohamed
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover; Title Page; Copyright; Contents; List of Figures; List of Tables; Preface; Introduction; I.1. Toward discrete element modeling of continuous materials; I.2. Scope and objective; I.3. Organization; 1: State of the Art: Discrete Element Modeling; 1.1. Introduction; 1.2. Classification of discrete methods; 1.2.1. Quantum mechanical methods; 1.2.2. Atomistic methods; 1.2.3. Mesoscopic discrete methods; 1.2.3.1. Lattice methods; 1.2.3.2. Smooth contact particle methods; 1.2.3.3. Non-smooth contact particle models; 1.2.3.4. Hybrid lattice-particle models 1.3. Discrete element method for continuous materials1.4. Discrete-continuum transition: macroscopic variables; 1.4.1. Stress tensor for discrete systems; 1.4.2. Strain tensor for discrete systems; 1.4.2.1. Equivalent continuum strains; 1.4.2.2. Best-fit strains; 1.4.2.3. Satake strain; 1.5. Conclusion; 2: Discrete Element Modeling of Mechanical Behavior of Continuous Materials; 2.1. Introduction; 2.2. Explicit dynamic algorithm; 2.3. Construction of the discrete domain; 2.3.1. The cooker compaction algorithm; 2.3.1.1. Stopping criterion of compaction process; 2.3.1.2. Filling process 2.3.1.3. Overlapping removing2.3.2. Geometrical characterization of the discrete domain; 2.3.2.1. Geometrical isotropy and granulometry; 2.3.2.2. Average coordination number; 2.3.2.3. Discrete domain fineness; 2.4. Mechanical behavior modeling; 2.4.1. Cohesive beam model; 2.4.1.1. Analytical model; 2.4.1.2. Strain energy computation; 2.4.2. Calibration of the cohesive beam static parameters; 2.4.2.1. Quasistatic tensile test description; 2.4.2.1.1. From discrete to continuous geometry; 2.4.2.1.2. Loading; 2.4.2.1.3. EM and M computation; 2.4.2.2. Parametric study 2.4.2.2.1. Microscopic Poisson's ratio influence2.4.2.2.2. Microscopic Young's modulus influence; 2.4.2.2.3. Microscopic radius ratio influence; 2.4.2.3. Calibration method for static parameters; 2.4.2.4. Convergence study; 2.4.2.5. Validation; 2.4.3. Calibration of the cohesive beam dynamic parameters; 2.4.3.1. Calibration method for dynamic parameters; 2.4.3.2. Validation; 2.5. Conclusion; 3: Discrete Element Modeling of Thermal Behavior of Continuous Materials; 3.1. Introduction; 3.2. General description of the method; 3.2.1. Characterization of field variable variation in discrete domain 3.2.2. Application to heat conduction3.3. Thermal conduction in 3D ordered discrete domains; 3.4. Thermal conduction in 3D disordered discrete domains; 3.4.1. Determination of local parameters for each discrete element; 3.4.2. Calculation of discrete element transmission surface; 3.4.3. Calculation of local volume fraction; 3.4.4. Interactions between each discrete element and its neighbors; 3.5. Validation; 3.5.1. Cylindrical beam in contact with a hot plane; 3.5.2. Dynamically heated sheet; 3.6. Conclusion; 4: Discrete Element Modeling of Brittle Fracture; 4.1. Introduction 4.2. Fracture model based on the cohesive beam bonds
Sommario/riassunto	Complex behavior models (plasticity, cracks, visco elascticity) face some theoretical difficulties for the determination of the behavior law at the continuous scale. When homogenization fails to give the right behavior law, a solution is to simulate the material at a meso scale in order to simulate directly a set of discrete properties that are responsible of the macroscopic behavior. The discrete element model has been developed for granular material. The proposed set shows how this method is capable to solve the problem of complex behavior that are linked to discrete meso scale effects.