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Nota di contenuto	Cover; Title page; Table of Contents; Acknowledgments; Introduction; PART 1. APPROACH AND GENERAL EQUATIONS; Chapter 1. Towards a Unified Description of Multiphase Flows; 1.1. Continuous approach and kinetic approach; 1.2. Eulerian-Lagrangian and Eulerian formulations; Chapter 2. Instant Equations for a Piecewise Continuous Medium; 2.1. Integral and differential forms of balance equations; 2.2. Phase mass balance equations in a piecewise continuous medium; 2.3. Momentum balances; 2.4. Energy balances; 2.5. Position and interface area balance equations 2.6. Extension for a fluid phase that is a mixture 2.7. Completing the description of the medium; Chapter 3. Description of a "Mean Multiphase Medium"; 3.1. The need for a mean description; 3.2. How are mean values defined?; 3.2.1. Temporal average; 3.2.2. Volumetric average; 3.2.3. Statistical average; 3.2.4. Filtered average; 3.3. Which average to choose, according to their advantages and disadvantages?; Chapter 4. Equations for the Mean Continuous Medium; 4.1. Global balance equations for the mean medium; 4.1.1. Total mass; 4.1.2. Total

momentum; 4.1.3. Total energy

4.2. Balance equations for the phases of a mean medium

4.2.1. Phase mass; 4.2.2. Phase momentum; 4.2.3. Energies of each phase; 4.2.4. Phase volume; 4.3. Complete representation of the mean medium;

4.3.1. Global representation; 4.3.2. Multifluid representation; 4.4. Mean equations of state; 4.5. Extensions; 4.5.1. Extension when a fluid phase is a mixture; 4.5.2. Extension for dispersed media; 4.6. Boundary conditions; PART 2. MODELING: A SINGLE APPROACH ADAPTABLE TO MULTIPLE APPLICATIONS; Chapter 5. The Modeling of Interphase Exchanges; 5.1. General methodology

5.2. Interface between phases and its mean area per unit of volume

5.2.1. Case of a suspension of liquid or solid particles; 5.2.2. Case of a medium containing parcels of variable shapes and sizes; 5.2.3. Case of a suspension of particles of constant and known sizes; 5.3. Forces of contact and friction between phases; 5.3.1. Pressure forces on spherical particles in a non-viscous flow; 5.3.2. Friction on solid particles in steady flow; 5.3.3. Slightly curved liquid-gas interfaces; 5.3.4. Drops or bubbles; 5.4. Heat transfers at the surface of a particle, without mass exchange

5.5. Heat and mass transfers during boiling

5.5.1. Slightly curved liquid-gas interfaces; 5.5.2. Bubbles; 5.6. Mass and heat exchanges by vaporization; 5.6.1. Mass transfer by evaporation at a flat interface; 5.6.2. Evaporation of a drop; 5.6.3. Combustion of a drop; Chapter 6. Modeling Turbulent Dispersion Fluxes; 6.1. Global modeling; 6.1.1. General information; 6.1.2. Kinetic energy of the "global fluctuations"; 6.1.3. Modeling the kinetic energy of the fluctuations; 6.1.4. Length scales for fluctuations and time scale for the dissipation of kinetic energy of fluctuations

6.1.5. Further studies on the dispersion flux of a phase
