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Disciplina	620
Soggetti	Automotive engineering Computer-aided engineering Fluid mechanics Mathematical physics Automotive Engineering Computer-Aided Engineering (CAD, CAE) and Design Engineering Fluid Dynamics Theoretical, Mathematical and Computational Physics
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Nota di contenuto	Introduction -- State of the art -- Approach and Method -- Process Abstraction, Parametrization and Sensitivity -- Numerical and Experimental Tests of Separation in a Combine Cleaning Device -- Summary, Conclusions and Outlook -- References.
Sommario/riassunto	This book discusses the application of the coupled CFD-DEM approach for simulating the separation of grain and material other than grain in combine harvester cleaning devices. Based on a literature study, it describes the most important influencing factors and presents a database for particle parameterization. It investigates the separation process in two steps with differing levels of process abstraction. The first step involves numerical separation in a vertically oscillating box with airflow, and in the context of a sensitivity study, investigates the effect of selected material, contact and operating parameters on the target variables' separation time and grain purity. In the second step, the numerical separation process was performed in a 200 mm wide

segment of a combine harvester cleaning device. The numerical results were then compared with experimental investigations in order to confirm the method's applicability. The Author Christian Korn studied Mechanical Engineering at the Technical University of Dresden and has been a Research Assistant at the Chair of Agricultural Systems and Technology since 2010.
