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Numerical methods for multidimensional sedimentation models *

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Abstract

We study multidimensional sedimentation models which are given by the Navier-Stokes equations, these equations describe the motion of the involved mixture coupled to a parabolic (hyperbolic) equation for the evolution of the local solid concentration. We are interested in the numerical simulation of the sedimentation of monodisperse suspensions. We propose numerical schemes [1, 2, 3] for the numerical solution of multidimensional models, describing the phenomenon in different configurations. Some numerical experiments illustrate properties of the model and the satisfactory performance of the proposed methods.

Key words: Finite volume element methods, sedimentation process, adaptive multiresolution scheme.

References

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