Bürger, R.; **Karlsen, K. H.**; **Risebro, N. H.**; **Towers, J. D.**

Monotone difference approximations for the simulation of clarifier-thickener units. (English)

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Summary: Clarifier-thickener units treating ideal suspensions can be modeled as an initial-value problem for a nonconvex scalar conservation law whose flux depends on a vector of discontinuous parameters. This problem can be treated by the well-known Engquist-Osher scheme if the discontinuous paremeters are discretized on a grid staggered against that of the conserved variable. We prove convergence of this scheme to a weak solution of the problem and illustrate its application to the clarifier-thickener setup by a numerical example.

MSC:

76T20 Suspensions
76M20 Finite difference methods applied to problems in fluid mechanics

Full Text: DOI

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