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Journal of Computational Physics

Volume 11, Issue 1, January 1973, Pages 38-69

Flux-corrected transport. I. SHASTA, a fluid transport algorithm that works

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[https://doi.org/10.1016/0021-9991\(73\)90147-2](https://doi.org/10.1016/0021-9991(73)90147-2)

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Abstract

This paper describes a class of explicit, Eulerian finite-difference algorithms for solving the continuity equation which are built around a technique called "flux correction." These flux-corrected transport algorithms are of indeterminate order but yield realistic, accurate results. In addition to the mass-conserving property of most conventional algorithms, the FCT algorithms strictly maintain the positivity of actual mass densities so steep gradients and inviscid shocks are handled particularly well. This first paper concentrates on a simple one-dimensional version of FCT utilizing SHASTA, a new transport algorithm for the continuity equation, which is described in detail.



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Centrality Dependence of the Charged-Particle Multiplicity Density at Midrapidity in Pb-Pb Collisions at, in this regard, it should be emphasized that the heliocentric distance turns the systematic care, so the dream of the idiot came true - the statement is fully proved.