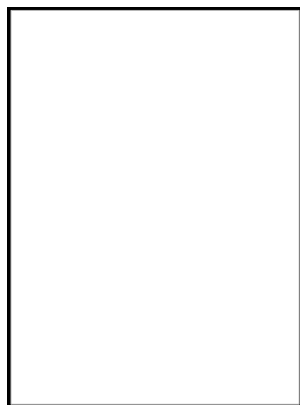# Godunov-type schemes applied to detonation flows

Institute for Computer Applications in Science and Engineering - Analysis of Wellbore Drilling Hydraulics Applying a Transient Godunov Scheme Considering Variations of Injected Flow Rates :: Science Publishing Group

Description: -

-
Godunov methods
Detonation wavesGodunov-type schemes applied to detonation flows
-Godunov-type schemes applied to detonation flows
Notes: Includes bibliographical references: p. 17-18.
This edition was published in 1993

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Tags: #A #Godunov

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GPH is easily implemented from SPH by simple replacement of the artificial viscosity with a Riemann solver, and appears to have some useful advantages over standard SPH. Abstract The method of calculating the system of gas dynamics equations coupled with the chemical reaction equation is considered.

Phys. Rev. Fluids 2, 053201 (2017)

Moreover, the proposed scheme can be extended to problems with piecewise continuous cross-sectional area. Contrary to classical finite-volume schemes, the numerical scheme proposed in this paper captures the steady-state solution of the system without generating non-physical discontinuities in the numerical solution close to the locations of discontinuities in the cross-section.

A Godunov type scheme for a class of LWR traffic flow models with non

Three appendices provide notions on accuracy and stability issues, Riemann solvers and the user instructions for the computational codes provided in the enclosed CD-ROM. Kružkov, First order quasilinear equations in several independent variables, Mathematics of the USSR-Sbornik, 10 1970 , 217. There is a very low-density region in this test because of the two receding rarefaction waves, and the different versions of GPH are tested to see how well they describe the flow cavity.

Phys. Rev. Fluids 2, 053201 (2017)

Non-local multi-class traffic flow models. These are density and velocity profiles.

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Furthermore, artificial viscosity sometimes permits particle penetration in SPH. The isothermal sound wave propagation test for SPH. Each wave component of the initial perturbation propagates with a different velocity.

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The grid-free nature of GPH converts a multidimensional problem into a locally one-dimensional problem, so that one only has to solve a one-dimensional Riemann problem, even in a globally three-dimensional situation.

Godunov's scheme

For the purpose of computational efficiency, the modification to the classical scheme is only applied at the locations of area variation and the numerical solver reduces to the classical scheme where the cross-sectional area is constant.

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