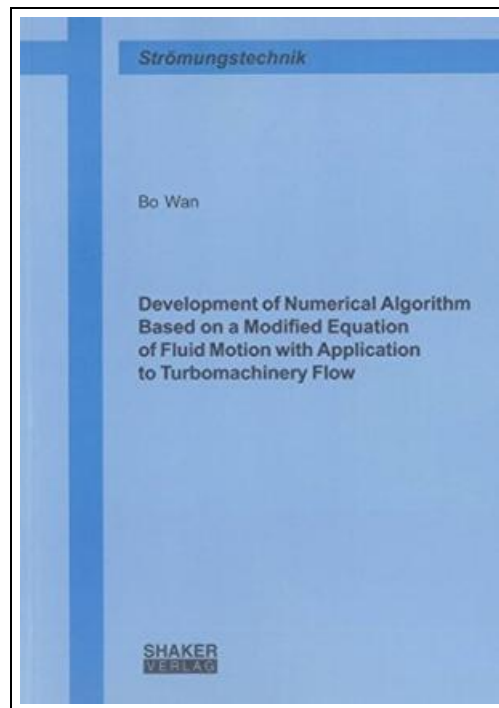


Development of Numerical Algorithm Based on a Modified Equation of Fluid Motion with Application to Turbomachinery Flow



Filesize: 5.68 MB

Reviews

This pdf may be worth getting. It is actually written in straightforward words and not difficult to understand. You will not feel monotony at any moment of your respective time (that's what catalogs are for about should you request me).
(Miss Golda Okuneva)

DEVELOPMENT OF NUMERICAL ALGORITHM BASED ON A MODIFIED EQUATION OF FLUID MOTION WITH APPLICATION TO TURBOMACHINERY FLOW

[DOWNLOAD](#)

Shaker Verlag Dez 2012, 2012. Taschenbuch. Condition: Neu. Neuware - On the basis of the scale-invariant theory of statistical mechanics, Sohrab introduced a linear equation termed the 'modified equation of fluid motion.' Preliminary investigations have shown that this modified equation can be extended to solve flow problems. Analytical solutions of basic flow problems were derived using this equation. In all cases the match between estimated and experimental data was good. These results stimulated further applications of this modified equation in the development of a CFD code to obtain numerical solutions of turbomachinery flow problems. In the present work, a novel numerical algorithm based on the aforementioned modified equation has been developed to solve turbomachinery flow problems. In order to avoid dealing with more technical conditions on the scale-invariant form of the energy equation, this investigation is restricted to incompressible flow. On the basis of the work done by Sohrab, the derivation process of the modified equation for incompressible flow is presented with more emphasis on its linear property as compared to the Navier-Stokes equation for incompressible flow. Furthermore, a detailed analysis of the present discretisation technique for the modified equation is performed. As compared with the Navier-Stokes equation, the numerical errors resulted from the discretisation of the modified equation, including the truncation and discretisation errors are discussed as well as the stability conditions. On the basis of the analysis above, a novel numerical solver is established by using the open source code OpenFOAM. A corresponding iteration technology is determined for the solver to dedicate reliable and efficient solutions to the algebraic linear equations derived from the FVM discretisation of the modified equation. In addition, a dynamic mesh solver developed on the basis of the ALE method is also built up to resolve the transient flow problems. Finally, the developed solver...



[Read Development of Numerical Algorithm Based on a Modified Equation of Fluid Motion with Application to Turbomachinery Flow Online](#)



[Download PDF Development of Numerical Algorithm Based on a Modified Equation of Fluid Motion with Application to Turbomachinery Flow](#)

You May Also Like



Two Treatises: The Pearle of the Gospell, and the Pilgrims Profession to Which Is Added a Glasse for Gentlewomen to Dresse Themselves By. by Thomas Taylor Preacher of Gods Word to the Towne of Reding. (1624-1625)

Proquest, Eebo Editions, United States, 2010. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.EARLY HISTORY OF RELIGION. Imagine holding history in your hands. Now...

[Read Book »](#)



Two Treatises: The Pearle of the Gospell, and the Pilgrims Profession to Which Is Added a Glasse for Gentlewomen to Dresse Themselves By. by Thomas Taylor Preacher of Gods Word to the Towne of Reding. (1625)

Proquest, Eebo Editions, United States, 2010. Paperback. Book Condition: New. 246 x 189 mm. Language: English Brand New Book ***** Print on Demand *****.EARLY HISTORY OF RELIGION. Imagine holding history in your hands. Now you...

[Read Book »](#)



Slave Girl - Return to Hell, Ordinary British Girls are Being Sold into Sex Slavery; I Escaped, But Now I'm Going Back to Help Free Them. This is My True Story.

John Blake Publishing Ltd, 2013. Paperback. Book Condition: New. Brand new book. DAILY dispatch from our warehouse in Sussex, all international orders sent Airmail. We're happy to offer significant POSTAGE DISCOUNTS for MULTIPLE ITEM orders.

[Read Book »](#)



Dog on It! - Everything You Need to Know about Life Is Right There at Your Feet

14 Hands Press, United States, 2013. Paperback. Book Condition: New. 198 x 132 mm. Language: English . Brand New Book ***** Print on Demand *****.Have you ever told a little white lie? Or maybe a...

[Read Book »](#)



What is in My Net? (Pink B) NF

Pearson Education Limited. Book Condition: New. This title is part of Pearson's Bug Club - the first whole-school reading programme that joins books and an online reading world to teach today's children to read. In...

[Read Book »](#)