Verification of Computer Codes in Computational Science and Engineering

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How can one be assured that computer codes that solve differential equations are correct? Standard practice using benchmark testing no longer provides full coverage because today's production codes solve more complex equations using more powerful algorithms. By verifying the order-of-accuracy of the numerical algorithm implemented in the code, one can detect most any coding mistake that would prevent correct solutions from being computed.

Verification of Computer Codes in Computational Science and Engineering sets forth a powerful alternative called OVMSP: Order-Verification via the Manufactured Solution Procedure. This procedure has two primary components: using the Method of Manufactured Exact Solutions to create analytic solutions to the fully-general differential equations solved by the code and using grid convergence studies to confirm the order-of-accuracy. The authors present a step-by-step procedural guide to OVMSP implementation and demonstrate its effectiveness.

Properly implemented, OVMSP offers an exciting opportunity to identify virtually all coding 'bugs' that prevent correct solution of the governing partial differential equations. Verification of Computer Codes in Computational Science and Engineering shows you how this can be done. The treatment is clear, concise, and suitable both for developers of production quality simulation software and as a reference for computational science and engineering professionals.

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Exactly why? Because this Verification of Computer Codes in Computational Science and Engineering is an unordinary book that the inside of the reserve waiting for you to snap the item but latter it will jolt you with the secret that inside. Reading this book close to it was fantastic author who write the book in such incredible way makes the content inside easier to understand, entertaining means but still convey the meaning entirely. So , it is good for you for not hesitating having this any more or you going to regret it. This unique book will give you a lot of gains than the other book include such as help improving your expertise and your critical thinking way. So , still want to postpone having that book? If I were being you I will go to the book store hurriedly.

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