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## International Journal of Modern Physics C (IJMPC)

Computational Physics and Physical Computation

Just Accepted | Current Issue | 2011 | 2010 | 2009 | All Volumes (1990-2011)

Volume: 12, Issue: 7(2001) pp. 1023-1033 DOI: 10.1142/S0129183101002309

Abstract | Full Text (PDF, 255KB)

Title: AN ITERATIVE NONUNIFORMLY SPACED FINITE DIFFERENCE SCHEME FOR COMPUTATIONAL FLUID DYNAMICS

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History: Received 12 April 2001 Revised 19 June 2001

**Abstract:** The settling dynamics of cylinders in a viscous Newtonian fluid are investigated numerically using an iterative finite difference scheme, which uses a nonuniformly spaced staggered grid. Special attention is given to the details of the spatial discretization and how they influence the physical results. The terminal velocity is calculated for different system sizes and cylinder diameters and the extrapolated values for an infinite system size are compared with the Oseen approximation.

Keywords: Finite Difference Scheme; Nonuniformly Spaced Grid; Computational Fluid Dynamics; Sedimentation

Imperial College Press | Global Publishing | Asia-Pacific Biotech News | Innovation Magazine | Asia Pacific Mathematics Newsletter Labcreations Co | Meeting Matters | National Academies Press

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