

Publications List

Ashwin Vaidya

Refereed Publications

1. G.P.Galdi and A. Vaidya, Translational fall of symmetric bodies in a Navier-Stokes liquid with applications to particle sedimentation, *Journal of mathematical fluid mechanics*, 3, 183-211, 2001.
2. G.P.Galdi, A.Vaidya, M. Pokorny, D.D.Joseph and J.Feng, Orientation of symmetric bodies falling in a second-order fluid at low Reynolds numbers, *Mathematical models and methods in applied sciences*, 12, 1653-1690, 2002.
3. A.Vaidya, Steady fall of bodies of arbitrary shape in a second-order fluid at zero Reynolds numbers, *Japan Journal of Industrial and Applied Math.*, 21, 3, 299-321, 2004.
4. A.Vaidya and G.A.J.Sparling, Classical solutions of the perturbed wave equation with singular kernel, *Acta Math Univ. Comeniana*, Vol. 72, 2, 65-75, 2003.
5. A.Vaidya and G.A.J. Sparling, The perturbed massless, wave equation with singular external potential, *Trends in Mathematical Physics Series*, Ed. Charles Benton, Nova Science Publishers, 209-236, 2004.
6. A. Vaidya, A note on the orientation of symmetric rigid bodies sedimenting in a power-law fluid, *Applied Math. Letters*, 18, 1332-1338, 2005.
7. A. Vaidya, Existence of freefall of rigid bodies in a second-order fluid model with applications to particle sedimentation, to appear in *Nonlinear Analysis: Real World Applications*, 7, 4, 748-768, 2006.
8. A. Vaidya, On the transient nature of shape-tilting bodies sedimenting in polymeric liquids, *Journal of Fluids and Structures*, 22, 253-259, 2006.
9. A.Vaidya and R.Wulandana, Nonlinear stability for convection with temperature dependent viscosity, accepted for publication in *Mathematical Methods in the Applied Sciences*, 29, 13, 1555-1561, 2006.
10. B.J. Chung, A.Vaidya and R. Wulandana, Stability of channel-flow with linear temperature dependent viscosity, *International Journal of Applied Mathematics and Mechanics*, 2, 1, 24-33, 2006.
11. M. Massoudi, A. Vaidya and R. Wulandana, Natural convection flow of a generalized second grade fluid in a vertical channel, *Nonlinear Analysis: Real World Applications*, 9(1), 80-93, 2008.

12. M. Massoudi and A. Vaidya, On some generalizations of the second grade fluid, *Nonlinear Analysis: Real World Applications*, 9(3),1169-1183, 2008.
13. B.J.Chung and A. Vaidya, An optimal principle in fluid-structure interaction, *Physica D*, in press (doi;10.1016/j.physd.2008.04.017), 2008.
14. R. Camassa, R.M. McLaughlin, N.M. Moore and A.Vaidya, Brachistochrones in potential flow and connection to Darwin's theorem, to appear in *Physics Letters A*, 2008.
15. R.Camassa, B.J.Chung, P. Howard, R.M. McLaughlin and A.Vaidya, Vortex induced oscillations of cylinders at low and intermediate Reynolds numbers, to appear in *Mathematical Fluid Mechanics: A Tribute to Giovanni Paolo Galdi*, Ed. Sequeira, A. and Rannacher, R., Springer Verlag, 2008.

Thesis

1. A.Vaidya, Investigations into the circumstellar environment of Herbig Ae/Be stars, Dept. of Physics & Astronomy, B.Phil. Thesis, University of Pittsburgh, 1995.
2. A.Vaidya, On the classical and quantized solutions of the perturbed wave equation with external potential, M.S. Thesis, Dept. of Mathematics, University of Pittsburgh, 1999.
3. A. Vaidya, Orientation of Rigid Bodies Sedimenting in Newtonian and Non-Newtonian Fluids, Ph.D. Thesis, Dept. of Mechanical Engineering, University of Pittsburgh, 2004.

In Preparation

1. G.P. Galdi and A. Vaidya, Existence of the coupled fluid-solid problem pertaining to the translation and rotation of a rigid body in a viscoelastic fluid, in preparation.
2. B.J.Chung , G.P. Galdi and A. Vaidya, Gravitational Settling of rigid bodies in a generalized second order fluid: The tilt-angle case, in preparation.
3. A. Silvestre and A. Vaidya, Existence of solutions to the flow of a generalized second order fluid past a moving body, in preparation.
4. S. Chatla, S. Kadam, D. Kolluru, S. Sinha and A. Vaidya, A comparative study of granularity based service selection algorithms, in preparation.