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Triantaphyllos R. Akylas

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Research Interests

Applied Mechanics; Wave Propagation; Vibrations; Hydrodynamic Stability; HydroAcoustics

Teaching Interests

Dynamics; Engineering Analysis

Educational Background

B.S. 1978 California Institute of Technology; Ph.D. 1981 MIT

Related Experience

Visiting Associate: Caltech (1990); University of New South Wales, Australia (1991); Institut Non Linéaire de Nice, France (1997); Loughborough University, England (2005)

Visiting Professor: École Normale Supérieure de Cachan, France (2004)

Principal Publications (last 5 years)

1. Akylas, T.R. and Davis, K.S., "Three-dimensional Aspects of Nonlinear Stratified Flow Over Topography Near the Hydrostatic Limit", *Journal of Fluid Mechanics* 428, 81-105, February 2001.

2. Calvo, D.C. and Akylas, T.R., "Stability of Steep Gravity Capillary Solitary Waves in Deep Water", *Journal of Fluid Mechanics* 452, 123-143, February 2002.

3. Calvo, D.C. and Akylas, T.R., "On Interfacial Gravity Capillary Solitary Waves of the Benjamin Type and their Stability", *Physics of Fluids* 15, 1261-1270, May 2003.

4. Prasad, D. and Akylas, T.R., "Wave Trapping and Upstream Influence in Stratified Flow of Large Depth", *Journal of Fluid Mechanics* 491, 301-324, September 2003.

5. Tabaei, A. and Akylas, T.R., "Nonlinear Internal Gravity Wave Beams", *Journal of Fluid Mechanics* 482, 141-161, May 2003.

6. Yang, J. and Akylas, T.R., "Continuous Families of Embedded Solitons in the

Third-Order Nonlinear Schrödinger Equation", Studies in Applied Mathematics 111, 359-375, October 2003.

7. Skopovi, I. and Akylas, T.R., "Transient Nonlinear Disturbances and Shelves in a Stratified Fluid Layer", Studies in Applied Mathematics 113, 139-169 (2004).

8. Tabaei, A., Lamb, K. and Akylas, T.R., "Nonlinear Effects in Reflecting and Colliding Internal Wave Beams", Journal of Fluid Mechanics 526, 217-243 (2005).

9. Kim, B. and Akylas, T.R., "On Gravity-Capillary Lumps", Journal of Fluid Mechanics 540, 337-351 (2005).

10. Kim, B. and Akylas, T.R., "On Gravity-Capillary Lumps. Part 2. Two-dimensional Benjamin Equation", Journal of Fluid Mechanics 557, 237-256 (2006).

11. Skopovi, I. and Akylas, T.R., "The Role of Buoyancy-Frequency Oscillations in the Generation of Mountain Gravity Waves", Theoretical and Computational Fluid Dynamics, in press.

12. Kim, B. and Akylas, T.R., "Transverse Instability of Gravity-Capillary Solitary Waves", Journal of Engineering Mathematics (Special Volume in Honor of J.N. Newman), accepted for publication.

Scientific and Professional Societies

ASME Journal of Applied Mechanics (1991-97), Wave Motion,
European Journal of Mechanics B, Studies in Applied Mathematics

Honors and Awards

N.S.F. Research Initiation Grant, 1982-1984

Henry L. Doherty Career Development Professorship
In Ocean Utilization, 1985-1987

N.S.F. Presidential Young Investigator Award, 1985

M.I.T. Graduate Student Council Teaching Award, 1996

M.I.T. Spira Award for Distinguished Teaching, 2001

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