

Wu, Tso-Ren

School of Civil & Environmental Engineering
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EDUCATION

- Ph.D., Civil and Environmental Engineering, Cornell University. 1998-2004
Dissertation: A Numerical Study of Three-Dimensional Breaking Waves and Turbulence Effects.
Concentrations: Wave-structure interaction, landslide generated waves, turbulence modeling, and computational fluid dynamics.
Advisor: Dr. Philip L.-F. Liu
- M.S., Civil and Environmental Engineering, National Central University (Taiwan). 1992-1994
Thesis: Fractal Geometry Analysis of Finger Structure during Infiltration
Concentrations: Fingering flow and fractal analysis.
Advisor: Dr. Ray Shyan Wu
- B.S., Soil and Water Conservation, National ChungHsing University (Taiwan). 1988-1992
Concentrations: Open channel flow and fluid mechanics.

TEACHING EXPERIENCE

- (1) Teaching assistant. Fluid Mechanics, Fall 2002.
[1] Lecturer: Dr. Edwin A. Cowen.
[2] School of Civil & Environmental Engineering, Cornell University, Ithaca.
[3] Major responsibility:
i. Taught undergraduate students at the course sections.
ii. Conducted and led laboratory experiences.
- (2) Teaching assistant. Case Studies in Environmental Fluid Mechanics, Spring 2002.
[1] Lecturer: Dr. Edwin A. Cowen.
[2] School of Civil & Environmental Engineering, Cornell University, Ithaca.
[3] Major responsibility:
i. Manage field experiments for graduate and undergraduate students.
ii. Led discussion sections.
- (3) Teaching assistant. Fluid Mechanics, Summer 2001.
[1] Lecturer: Dr. Monroe L. Weber-Shirk.
[2] School of Civil & Environmental Engineering, Cornell University, Ithaca.
[3] Major responsibility:
i. Taught undergraduate students at the course sections.
ii. Conducted and led laboratory experiments.
- (4) Teaching assistant. Hydraulic Engineering, Spring 2001.
[1] Lecturer: Dr. Monroe L. Weber-Shirk.
[2] School of Civil & Environmental Engineering, Cornell University, Ithaca.
[3] Major responsibility:
i. Led discussion sections.
ii. Taught undergraduate students at the course section.
iii. Managed a field trip to visit a water treatment plant in Ithaca, NY.

RESEARCH EXPERIENCE

Postdoctoral Associate, Cornell University, Ithaca, NY Fall 2004 – Present

Work with: Professor Philip L.-F. Liu

Research topics: Wave-structure interactions, landslide generated tsunamis, wave-generated sediment transport.

Graduate Research Assistant, Cornell University, Ithaca, NY. Summer 2002 – Summer 2004

Advisor: Professor Philip L.-F. Liu.

Research topics: Three-dimensional wave-structure interaction, moving boundary problems, LES turbulence model, $k - \varepsilon$ turbulence model, and landslide generated waves.

Graduate Research Assistant, Cornell University, Ithaca, NY. Fall 2000

Advisor: Professor Philip L.-F. Liu.

Research topic: The forced Boussinesq equations for storm surges and ship waves.

HONORS & AWARDS

DeFrees Fellowship, Cornell University, Ithaca, NY. Fall 2002 – Fall 2003

Graduate Student Transportation Grant, Cornell University, Ithaca, NY. 2001 and 2003

WORKING EXPERIENCE

Assistant Research Scientist, Agricultural Engineering Research Center. 1994-1998

Topics:

1. System planning of water resources.
2. Distribution of water resources.
3. Automatic design of hydraulic structures.

PUBLICATIONS

- (1) Philip L.-F. Liu, Tso-Ren Wu, Fredric Raichlen, Costas Synolakis, and Jose Borrero, and, 2004. "Runup and rundown from three-dimensional sliding masses," under review for Journal of Fluid Mechanics.
- (2) Philip L.-F. Liu, and Tso-Ren Wu, 2004. "Waves generated by moving pressure disturbances in rectangular and trapezoidal channels," Journal of Hydraulic Research 42 (2): 163-171.
- (3) Patrick Lynett, Tso-Ren Wu, and Philip L.-F. Liu, 2002. "Modeling wave runup with depth-integrated equations," Coastal Engineering, v. 46(2), p. 89-107.

CONFERENCE & WORKSHOP WORKS

- (1) Tso-Ren Wu, and Philip L.-F. Liu 2004. "Runup and rundown from three-dimensional sliding masses," presented at Truchas workshop 2004 in Los Alamos, NM.
- (2) Tso-Ren Wu, and Philip L.-F. Liu 2004. "3D landslide generated tsunamis," The third international workshop on long-wave runup models in Catalina Island, CA.
- (3) Tso-Ren Wu, and Philip L.-F. Liu 2003. "A numerical study of breaking waves and turbulence effects," presented at Truchas workshop 2004 in Santa Fe, NM.
- (4) Tso-Ren Wu, Stephen D. DeGloria, and Philip L.-F. Liu, 2001. "GIS application in tsunami hazard mitigation," presented at the fifth regional symposium PACON 2001 in Burlingame, CA.

- (5) Tso-Ren Wu, Chuan-Pin Chien, and Chi-Ping Hwang, 1995. "Study on the model for dividing irrigation of reservoir and pond irrigation," 1995 Conference of Agricultural Engineering, Taipei, Taiwan, 289-298.
- (6) Tso-Ren Wu, Ray-Shyan Wu, and Hsien-Ter Chou, 1994. "A study on fractal dimension measurement," 13th Conference in Surveying and Applications, Taipei, Taiwan, 719-727.

REFERENCES

Philip L.-F. Liu, Ph.D.

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Stephen D. DeGloria, Ph.D.

Professor

Crop and Soil Sciences, Cornell University

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Ray-Shyan Wu, Ph.D.

Professor

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