Farid Karimpour

Department of Civil and Environmental Engineering,
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Education

Colorado State University, Fort Collins, CO, USA — expected 2014
Doctor of Philosophy, Civil & Environmental Engineering
Environmental Fluid Dynamics
Advisor: Prof. Subhas K. Venayagamoorthy
Dissertation Title: *Turbulence Modeling of Stably Stratified Wall-Bounded Flows*

Sharif University of Technology, Tehran, Iran — 2010
Master of Science, Civil & Environmental Engineering
Hydraulics & Water Resources Group
Advisor: Prof. Seyed Mahmood Borghei
Dissertation Title: *Experimental Study of Two-Phase Slug Flow in a Rectangular Channel with Adverse Slope*

Iran University of Science & Technology, Tehran, Iran — 2007
Bachelor of Science in Engineering, Civil & Environmental Engineering

Research Interests

- Stratified Turbulence
- Parameterizations of turbulent mixing and mixing efficiency in stratified flows
- Wall-Bounded Turbulence
- Turbulence Modeling
- Geophysical Fluid Dynamics
- Environmental Fluid Mechanics

Peer-reviewed publications

1. **Karimpour, F.** and Venayagamoorthy, S. K., "A revisit of the equilibrium assumption for predicting near-wall turbulence", *J. Fluid Mech.*, vol. 760, pp. 304-312, 2014.
2. **Karimpour, F.** and Venayagamoorthy, S. K., "A simple turbulence model for stably stratified wall-bounded flows", *J. Geophys. Res.: Oceans*, vol. 119, pp. 870-880, 2014.
3. **Karimpour, F.** and Venayagamoorthy, S. K., "Some insights for the prediction of near-wall turbulence", *J. Fluid Mech.*, vol. 723, pp. 126-139, 2013.

Conference presentations

1. **Karimpour, F.** and Venayagamoorthy, S. K., "A revisit of the equilibrium assumption for prediction of near-wall turbulence", 67th Annual Meeting of the Division of Fluid Dynamics, American Physical Society, November 2014, San Francisco, California, USA, (Accepted for Oral Presentation).
2. Venayagamoorthy, S. K. and **Karimpour, F.**, "Inference of turbulent dissipation rates in wall-bounded turbulent flows", 67th Annual Meeting of the Division of Fluid Dynamics, American Physical Society, November 2014, San Francisco, California, USA, (Accepted for Oral Presentation).
3. Garanaik, A., **Karimpour, F.** and Venayagamoorthy, S. K., "Evaluation of the standard k-ϵ closure scheme for modeling stably stratified wall-bounded turbulence", 67th Annual Meeting of the Division of Fluid Dynamics, American Physical Society, November 2014, San Francisco, California, USA, (Accepted for Oral Presentation).

4. **Karimpour, F.** and Venayagamoorthy, S. K., "A hybrid RANS closure scheme for the near-wall turbulence", 66th Annual Meeting of the Division of Fluid Dynamics, American Physical Society, November 2013, Pittsburgh, Pennsylvania, USA.
5. Venayagamoorthy, S. K. and **Karimpour, F.**, "Turbulent mixing in stratified wall-bounded turbulent flows", 66th Annual Meeting of the Division of Fluid Dynamics, American Physical Society, November 2013, Pittsburgh, Pennsylvania, USA.
6. **Karimpour, F.** and Venayagamoorthy, S. K., "Turbulence modeling of wall-bounded flows", CSU Environmental Fluid Dynamics Seminar Series, 11 October 2013, Fort Collins, Colorado, USA.
7. **Karimpour, F.**, "Turbulence modeling of stably stratified wall-boubded flows", PhD Proposal Defense, May 2013, Fort Collins, Colorado, USA.
8. **Karimpour, F.** and Venayagamoorthy, S. K., "A zero-equation closure model for wall-bounded stably stratified flows", 65th Annual Meeting of the Division of Fluid Dynamics, American Physical Society, November 2012, San Diego, California, USA.
9. **Karimpour, F.** and Venayagamoorthy, S. K., "Stratified wall-bounded turbulence modeling", CSU Environmental Fluid Dynamics Seminar Series, November 2012, Fort Collins, Colorado, USA.
10. **Karimpour, F.** and Venayagamoorthy, S. K., Improved RANS Turbulence models for Stably Stratified Environmental Flows, Proceedings of the third International Symposium on Shallow Flows, for oral presentation, June 2012, Iowa City, USA.
11. **Karimpour, F.** and Venayagamoorthy, S. K., "Evaluation and Improvement of RANS models for Stably Stratified Turbulence", 64th Annual Meeting of the Division of Fluid Dynamics, American Physical Society, November 2011, Baltimore, Maryland, USA.
12. **Karimpour, F.** and Venayagamoorthy, S. K., "Modeling 1-D stratified turbulent channel flow", CSU Environmental Fluid Dynamics Seminar Series, October 2011, Fort Collins, Colorado, USA.
13. **Karimpour, F.** and Borghei, S. M., "Effect of Adverse Slope on Hydraulic Properties of Two Phase Slug Flow", XXXII Italian Conference of Hydraulics and Hydraulic Constructions, September 2010, Palermo, Italy.
14. **Karimpour, F.** and Alemohammad, S. H., "Water Supply Development in Iran during Recent Drought", The International Conference on Capacity Building in Urban Water Management under Water Scarcity Conditions, December 2009, Muscat, Oman.

Invited Talks

1. **Karimpour, F.**, "Mixing in stably stratified wall-bounded turbulent flows: Insights and Modeling", Center for Turbulence Research, Stanford University, Stanford, California, USA, May 2014.

Research Experience

Graduate Research Assistant Jan. 2011-Present
Civil & Environmental Engineering Department
Colorado State University, Fort Collins, CO

- Investigating turbulence in wall-bounded, stratified flows with an emphasis on prediction of mixing. Performing Reynolds-averaged Navier-Stokes (RANS) modeling of stably stratified wall-bounded turbulence. Analyzing data from numerical and laboratory flows.

Graduate Research Assistant 2007-2010
Civil & Environmental Engineering Department
Sharif University of Technology, Tehran, Iran

- Experimentally investigating pressure fluctuations and slug flow formations in two-phase flows in a rectangular tunnel by using Differential Pressure Transducers (DPT).

Teaching Experience

Engineering Mechanics - Dynamics — Summer 2014
Instructor — Colorado State University

Fluid Mechanics — Fall 2013 and Spring 2014
Guest Lecturer — Colorado State University

Fluid Turbulence and Modeling — Spring 2013
Guest Lecturer — Colorado State University

Hydraulics — Fall 2008 and Spring 2009
Teaching Assistant — Sharif University of Technology

Advanced Hydraulics — Fall 2008
Teaching Assistant — Sharif University of Technology

Statics — Spring 2007
Teaching Assistant — Iran University of Science and Technology

Strength of Materials — Spring 2007
Lab Assistant — Iran University of Science and Technology

Awards and Honors

Student Travel Award, ISSF, Iowa City, Iowa	Summer 2012
Borland Scholarship	Spring 2012
Student Travel Grant, APS-DFD meeting, Baltimore, MD	Fall 2011
Borland Scholarship	Fall 2011
Jack Cermack Wind Engineering Scholarship	Fall 2011
Borland Scholarship	Spring 2011

Professional Membership

- American Physical Society (APS)
- Americal Society of Civil Engineers (ASCE)
- American Geophysical Union (AGU)

Computer Skills

- **Programming Languages:** MATLAB, FORTRAN
- **Text Softwares:** LaTeX, Microsoft Office Suite
- **Operating Systems:** Linux, Microsoft Windows