WENLONG PEI

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Department of Mathematics, University of Pittsburgh,
615 Thackeray Hall, Pittsburgh, PA, 15260

RESEARCH INTEREST

Primary: Numerical Analysis, Computational Mathematics, Computational Fluid Dynamics, Finite Difference Method

Secondary: Mathematical Finance

EDUCATION

University of Pittsburgh December 2021 or August 2022 (expected)
Ph.D. in Mathematics
Thesis: A Variable Time-stepping Algorithm for Flow Problems

University of Connecticut August 2014
M.S. in Applied Financial Mathematics

Shanghai University of International Business and Economics, China July 2011
Bachelor in Economics
Major: Finance

RESEARCH PAPER

1. Y. Qin, Y. Hou, W. Pei, and J. Li, *A variable time-stepping algorithm for the unsteady Stokes/Darcy model*, Journal of Computational and Applied Mathematics, page 113521, 2021.
2. W. Layton, W. Pei, Y. Qin, C. Trenchea, *Analysis of the variable step method of Dahlquist, Liniger and Nevanlinna for fluid flow*, Numerical Methods for Partial Differential Equations, accepted (2021).
3. W. Layton, W. Pei, and C. Trenchea, *Refactorization of a variable step, unconditionally stable method of Dahlquist, Liniger and Nevanlinna*, arXiv preprint arXiv:2108.09339, (2021).
4. W. Layton, W. Pei, and C. Trenchea, *Some fine properties of the method of Dahlquist, Liniger and Nevanlinna*, (working in progress).
5. W. Layton, W. Pei, and C. Trenchea, *Semi-implicit algorithm of the method of Dahlquist, Liniger and Nevanlinna for Navier-Stokes equations*, (working in progress).
6. W. Layton, W. Pei, and C. Trenchea, *The variable time-stepping ensemble algorithm for fluid flow*, (working in progress).

CONFERENCE PRESENTATION

"Time Accuracy of The Variable Step DLN Method for Navier-Stokes Equations", FEM Circus, Virginia Tech, Nov. 2019

"A Variable Time-stepping Algorithm for the Unsteady Stokes/Darcy Model", FEM Circus, Online, April. 2021

TEACHING EXPERIENCE

Teaching Assistant for Recitations:

Math 120: Business Calculus	Fall 2016, Fall 2017
Math 220: Calculus I	Fall 2017, Spring 2018, Fall 2018
Math 230: Calculus II	Spring 2019, Summer 2019, Summer 2020
Math 240: Calculus III	Spring 2019, Summer 2019
Math 420: Introduction to Theory of One Variable Calculus	Spring 2021
Math 430: Introduction to Abstract Algebraic System	Fall 2021
Math 470: Actuarial Mathematics I	Spring 2018, Fall 2019, Spring 2020, Fall 2020
Math 1121: Actuarial Mathematics II	Spring 2020, Spring 2021
Math 1122: Actuarial Mathematics III	Fall 2020

PROGRAMMING SKILLS

Matlab, R, FreeFem++, C++, LaTeX

LAGRANGES

Chinese(Native) English(Fluent)

REFERENCE

Professor William Layton
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