

CONFERENCES
ORGANIZED OR
CHAired

Co-organizer of minisymposium: Computational Methods in Environmental Fluid Mechanics, World Congress on Computational Mechanics - **WCCM 2026**, July 19-24, 2026 Munchen, Germany.

Co-organizer of minisymposium: Computational Methods for Water Environmental Problems and Coastal/Flood Disaster Mitigation, International Conference on Computational Engineering and Science for Safety and Environmental Problems - **COMPSAFE 2025**, July 1-4, 2025 Kobe, Japan.

Co-organizer of minisymposium: Computational Methods in Environmental Fluid Mechanics, US National Congress on Computational Mechanics - **USNCCM 2025**, July 20-24, 2025 Chicago, Illinois.

Organize of workshop: Water Waves Workshop, March 12-13, 2025, Oslo, Norway

Co-organizer of minisymposium: Stable FE Methods for Challenging Problems in Engineering and Science, European Congress on Computational Methods in Applied Sciences and Engineering - **ECCOMAS 2024**, June 3-7 2024, Lisbon, Portugal

Co-organizer of minisymposium: Computational Methods in Environmental Fluid Mechanics, US National Congress on Computational Mechanics 17 - **USNCCM 17**, July 23-27, 2023 Albuquerque, New Mexico.

Co-organizer of minisymposium : Advances in Bayesian Inversion for Geoscience Problems, SIAM Conference on Mathematical & Computational Issues in the Geosciences, **SIAM GS23** June 19 - 22, 2021, Bergen, Norway.

Co-Organizer of minisymposium: Computational Methods in Environmental Fluid Mechanics Fall Meeting 2022 - **22nd Computational Fluids Conference**, Cannes, France, April 25 - 28, 2023.

Co-Organizer of minisymposium: Recent Advances in Flood and Shallow Water Modeling – American Geophysical Union Fall Meeting 2022 - **AGU 2022**, Chicago, Illinois, December 12 - 16, 2022.

Co-Organizer of minisymposium: Recent Advances in Numerical Simulation of Time-Dependent Problems – German Association for Computational Mechanics 9th Colloquium on Computational Mechanics 2022 - **GACM 2022**, Essen, Germany, September 21 - 23, 2022.

Co-Organizer of minisymposium: Computational Methods in Environmental Fluid Flows – World Congress on Computational Mechanics 2022 - **WCCM-APCOM 2022**, Yokohama, Japan, July 31 to August 5, 2022.

Co-Organizer of minisymposium: Computations in Environmental Fluid Flows, European Community on Computational Methods in Applied Sciences Congress 2022 - **ECCOMAS 2022**, Oslo, Norway, June 5 – 9, 2022.

Co-Organizer of minisymposium: High-order structure preserving techniques for simulating transport phenomena and fluids, SIAM Texas-Louisiana annual meeting 2022 - **SIAM Tx-La 21**, South Padre Island, Texas, November 5 – 7, 2021.

Co-organizer of minisymposium: Computational Methods in Environmental Fluid Mechanics, US National Congress on Computational Mechanics 16 - **USNCCM 16**, July 25 - 29, 2021, Chicago, Illinois.

Co-Organizer of minisymposium: Stabilized and Unconditionally Stable FE Methods for Challenging Problems in Engineering and Science, ECCOMAS Young Investigator's conference - **ECCOMAS YIC 2021**, July 7 - 9, 2021, Valencia, Spain.

Co-organizer of minisymposium : Computational Methods in Environmental Fluid Mechanics, SIAM Conference on Mathematical & Computational Issues in the Geosciences, **SIAM GS21** June 21 - 24, 2021, Milano, Italy.

Program Committee Member of workshop Artificial Intelligence and High-Performance Computing for Advanced Simulations (formerly Agent-Based Simulation, Adaptive Algorithms and Solvers) At the International Conference on Computational Science - **ICCS 2020** - present.

CONFERENCE
PRESENTATIONS

M. Scarborough and E. Valseth. Developing storm surge models of the Norwegian coastline. Nordic Hydrological Conference on "Water and Climate Change: Impacts and Adaptation", June 3 to 5, 2025, Reykjavik, Iceland

M. Scarborough, C. Dawson, E. Kubatko, C. Wichitrnithed, and E. Valseth. DG-SWEM with Parametric Rainfall. ADCIRC Users Group Meeting 2025, May 12, 2025, Vicksburg, MS, USA

E. Valseth, C. Wichitrnithed, M. Loveland, A. Kiaghadi and C. Dawson, Development of A Combined Hurricane Storm Surge and River Runoff Model for the Texas Coast to understand transitional zones. NHERI Computational Symposium Feb 5-7, 2025, Los Angeles, CA, USA.

E. Valseth, C. Wichitrnithed, and C. Dawson, A novel shallow water equation solver based on mixed continuous-discontinuous function spaces. WCCM 2024, July 21-26, 2024 Vancouver, Canada.

E. Valseth, C. Wichitrnithed, E. Kubatko, Y. Kang, and C. Dawson, A continuous-discontinuous shallow water solver for compound flood modeling. WCCM 2024, July 21-26, 2024 Vancouver, Canada.

E. Valseth, C. Wichitrnithed, E. Kubatko, M. Hudson, Y. Kang, and C. Dawson, A Discontinuous Galerkin Method for Compound Flood Modeling. IRTG Annual Meeting, December 13-15, 2023 Aachen, Germany.

E. Valseth, C. Dawson, C. Wichitrnithed, K. Wu, S. Cai, M. Scarborough, and A. Kiaghadi, Development of A Combined Hurricane Storm Surge and River Runoff Model for the Texas Coast. April 11 - 14, 3rd International Workshop on Waves, Storm Surges, and Coastal Hazards, October 1-6 South Bend, Indiana.

E. Valseth, Leveraging Frontera in Extreme Fidelity modeling of Storm surge in Texas and across the Globe. Frontera User meeting, August 4-5 2023 Austin, Texas.

E. Valseth, C. Wichitrnithed, and C. Dawson, A Local Discontinuous Galerkin Method for Compound Flood Modeling. USNCCM 17, July 23-27, 2023 Albuquerque, New Mexico.

E. Valseth, C. Wichitrnithed, E. Kubatko, M. Hudson, Y. Kang, and C. Dawson, An Explicit Discontinuous Galerkin Method for Compound Flood Modeling. SIAM GS23, Bergen, Norway, June 19 - 22, 2023.

E. Valseth, C. Dawson, C. Wichitrnithed, E. Kubatko, Y. Kang, M. Hudson, Discontinuous Galerkin Methods for Coupled and Compound Flood Simulations. Large-Scale Scientific Computations 2023 June 5-9, 2023, Sozopol, Bulgaria

E. Valseth, C. Wichitrnithed, E. Kubatko, M. Hudson, Y. Kang, and C. Dawson, An Explicit Discon-

tinuous Galerkin Method for Compound Flood Modeling. 22nd Computational Fluids Conference, Cannes, France, April 25 - 28, 2023.

E. Valseth, M. T. C. Vargas, C. Wichitrunthed, J. Westerink, and C. Dawson, Development of A Hurricane Storm Surge and River Runoff Model for the Texas Coast. April 11 - 14, Texas Water Conference 2023 Houston, Texas.

E. Valseth, C. Dawson, and A. Romkes. A Stable and Adaptive FE Method for Convection-Dominated Diffusion Problems. SIAM CSE 2023, Feb. 25 - March 3 2023, Amsterdam, Netherlands.

E. Valseth, C. Dawson, E. Buskey, A Study of the Potential Impact of Deepening the Corpus Christi Ship Channel on Hurricane Storm Surge. American Geophysical Union Fall Meeting 2022, Chicago Illinois.

M. T. C. Vargas, E. Valseth, C. Dawson, J. J. Westerink, *et al.* Understanding the Coupled Effect of Upland Hydrology and Ocean Hydrodynamics During Extreme Events Along the East and Gulf of Mexico Coasts of the US. American Geophysical Union Fall Meeting 2022, Chicago Illinois.

D. Li, H. Jiang, N. Z. Fang, E. Valseth, C. Dawson, Development and Evaluation of Feasible Hydraulic Models to Understand Hydrodynamics of Lake Livingston in Texas. American Geophysical Union Fall Meeting 2022, Chicago Illinois.

K. Wang, J. Chen, E. Valseth, C. Dawson, G. Wells, Mapping Surface Deformation Along the Gulf Coast Using a Novel Spatiotemporal Interferogram Filtering Algorithm. American Geophysical Union Fall Meeting 2022, Chicago Illinois.

E. Valseth, C. Dawson, E. Buskey, A Study of the Potential Impact of Deepening the Corpus Christi Ship Channel on Hurricane Storm Surge. American Geophysical Union Fall Meeting 2022, Chicago Illinois.

E. Valseth, M. T. C. Vargas, C. Wichitrunthed, J. Westerink, and C. Dawson, Development of Compound and Storm Surge Meshes for the Texas Coast. International Conference on Coastal Engineering, December 9-13, 2022 Sydney, Australia.

E. Valseth and C. Dawson, Large-Scale Computational Modeling of the Environmental Impacts of Channel Deepening on the Texas Coast Using Frontera. Frontera Users Meeting 2022, August 4-5, 2022 Austin, Texas.

E. Valseth, M. T. C. Vargas, C. Wichitrunthed, J. Westerink, and C. Dawson, Development of Compound and Storm Surge Meshes for the Texas Coast. Frontiers in Hydrology 2022, June 19 - 24, 2022 San Juan, Puerto Rico.

E. Valseth, Clint Dawson, Albert Romkes and Austin Kaul, A Stable Mixed Finite Element Method for the Elastic Deformation of Coastal Structures. ECCOMAS Congress 2022, June 5 - 9, 2022 Oslo, Norway.

L. Demkowicz S. Henneking, M. Melenk, E. Valseth Non-Polynomial trial shape functions in the DPG method. ECCOMAS Congress 2022, June 5 - 9, 2022 Oslo, Norway.

M. Loveland, C. Dawson, E. Valseth Stabilized Finite Elements for the Action Balance Equation. Waves in Shallow Water Environments 2022 Brest, France.

E. Valseth, M. Loveland, C. Dawson, E. Buskey. A Study of the Potential Impact of Dredging the Corpus Christi Ship Channel on Passive Particle Transport. Planet Texas 2050 Symposium, April

11 - 15 Austin, Texas.

S. Cai, E. Valseth, K. Brown, M. Shensky, R. Langdon, C. Dawson. Applying ADCIRC to Study Hurricane Dolly Storm Surge in the Rio Grande Valley Region. Planet Texas 2050 Symposium, April 11 - 15 Austin, Texas.

C. Wichitrunthed E. Valseth, C. Dawson, Developing a Compound Flooding Model using the Discontinuous Galerkin Method. Planet Texas 2050 Symposium, April 11 - 15 Austin, Texas.

Victor Chen, Georgia K. Stuart, E. Valseth, Samuel Estes, Clint Dawson. Data Science for Detection of Oil Spills. 2022 Energy HPC Conference, March 1-3, 2022 Houston, Texas.

E. Valseth, C. Dawson, E. Buskey, A Study of the Potential Impact of Deepening the Corpus Christi Ship Channel on Hurricane Storm Surge. Ocean Sciences Meeting 2022, February 27- March 4, 2022 Honolulu, Hawaii.

E. Valseth, M. Loveland, C. Dawson, E. Buskey, Modeling the Potential Impact of Dredging the Corpus Christi Ship Channel On Passive Particle Transport. AGU Annual Meeting 2021, December 13 - 17, 2021, New Orleans, Louisiana.

E. Valseth, C. Dawson, Goal-Oriented Error Estimation for the Shallow Water Equations. 4th Annual Meeting of the SIAM Texas-Louisiana Section, November 5-7, 2021 South Padre Island, Texas.

E. Valseth, M. Loveland, C. Dawson, E. Buskey, A Study of the Potential Impact of Dredging the Corpus Christi Ship Channel on Passive Particle Transport. YCSEC-A 2021, October 28 - 30, 2021, Myrtle Beach, North Carolina.

M. Loveland, E. Valseth, C. Dawson, E. Buskey, Simulating Potential Impacts of Dredging on Local Fish Populations. TACC Symposium for Texas Researchers 2021, September 23-24, 2021, Austin, Texas.

E. Valseth, Dawson, C., An Adaptive Space-Time FE Method for the Shallow Water Equations. USNCCM 16, July 25 - July 29, 2021, Chicago, Illinois (*virtual*).

E. Valseth, Dawson, C., A Space-Time FE Method for the Shallow Water Equations. SIAM GS21, June 21 - June 24, 2021, Milan, Italy (*virtual*).

E. Valseth, Dawson, C., A DPG Method for the Shallow Water Equations Using Continuous Trial Functions. SIAM CSE 2021, March 1-5, 2021, Fort Worth, Texas (*virtual*).

E. Valseth, Dawson, C., An unconditionally stable space-time FE method for the Shallow Water Equations. 3rd Annual Meeting of the SIAM Texas-Louisiana Section, October 16-18, 2020, College Station, Texas.

E. Valseth, Dawson, C., A space-time FE method for the Shallow Water Equations. TACC Symposium for Texas Researchers 2020, September 17-18, 2020, Austin, Texas.

E. Valseth, Dawson, C.N., Romkes, A., Calo, V.M., Automatic Variationally Stable Analysis for FE Computations. WCCM ECCOMAS 2020, July 19-24, 2020, Paris, France. *Cancelled due to COVID-19*

Behnoudfar, P., E. Valseth, Calo, V.M., Romkes, A., Stabilized FE Methods for Time-Dependent Problems. WCCM ECCOMAS YIC Special Track 2020, July 19-24, 2020, Paris, France. *Cancelled*

due to COVID-19

E. Valseth, Romkes, A., Calo, V.M., Automatic Variationally Stable Analysis for FE Computations. ECCOMAS YIC 2019, September 1 - 6, 2019, Krakow, Poland.

E. Valseth, Romkes, A., Calo, V.M., Automatic Variationally Stable Analysis for FE Computations of Convection-Dominated Diffusion Problems. USNCCM 2019, July 28 - August 1, 2019, Austin, Texas.

Romkes, A., E. Valseth, Calo, V.M., Automatic Variationally Stable FE and Goal-Oriented A Posteriori Error Analyses of Convection-Dominated Boundary Value Problems. FEF 2019, March 31 - April 3, 2019, Chicago, Illinois.

Romkes, A., Calo, V.M., Paszynski, M., Los, M., E. Valseth., Automatic Variationally Stable Analysis for FE Computations Based on the DPG Framework. USACM IGA 2018: Integrating Design and Analysis, October 10-12, 2018, Austin, Texas, USA.

Calo, V. M., Collier, N., Kirby, R., Los, M., Niemi, A., Paszynski, M., Romkes, A., E. Valseth, “Automatic Variationally Stable Discretizations”, II International Conference Multiscale Methods and Large-Scale Scientific Computing , August 15-17, 2018, Moscow, Russia.

E. Valseth, Romkes, A., Calo, V.M., and Kirby, R.C., A First Order System Discontinuous Petrov-Galerkin Method Using Continuous Trial Spaces. WCCM 2018, July 22-27, 2018, New York City, USA.

Calo, V. M., Collier, N., Demkowicz, L., Gopalakrishnan, J., Los, M., Niemi, A., Paszynski, M., Romkes, A., E. Valseth, “Stabilization of convection-dominated diffusion with optimal test functions”, International Conference on Boundary and Interior Layers (BAIL 2018) , June 18-22, 2018, Glasgow, Scotland.

Romkes A., E. Valseth, and Calo, V.M., A Hybrid Continuous-Discontinuous Petrov-Galerkin Method for Second Order PDEs. 5th Int’l Congress on Multiphysics, Multiscale, and Optimization Problems, May 24-25, 2018, BCAM, Bilbao, Bizkaia, Spain

Romkes A., Moody, T.C., and E. Valseth, Multi-Scale Modeling of Heterogeneous Elastic Solids based on the Control of Modeling Error through Local Error Estimation. 4th Int’l Congress on Multiphysics, Multiscale, and Optimization Problems, May 27, 2016, BCAM, Bilbao, Bizkaia, Spain

INVITED SEMI-
NARS/PLENARIES

State-of-the-art modeling efforts in storm surge in the United States and Norway. Statkraft ”knowledge session seminar”. June 20, 2024, Oslo, Norway.

A Discontinuous Galerkin Shallow Water Equations Solver for Compound Flood Modeling. Los Alamos National Laboratory T-Division Seminar, April 3, 2024, Los Alamos, New Mexico.

Numerical Modeling of Storm Surge Induced by Tropical Cyclones. EMerald Geomodeling Seminar, March 7, 2024, Oslo, Norway.

State-of-the-art Modeling Efforts in Storm Surge Induced by Tropical Cyclones. Norwegian Geotechnical Institute Seminar, February 22, 2024, Oslo, Norway.

State of The Art Coastal Ocean Modeling. Department of Computer Science Seminar, AGH University, March 10, 2023, Krakow, Poland.

Stable Finite Element Methods and Engineering Applications. Keynote presentation at KomPlas-

Tech Conference, March 5-8 2023, Zakopane Poland.

Leveraging ADCIRC in the Modeling of Compound Flooding and the Environmental Impacts of Proposed Dredging Projects on the Texas Coast. The University of Notre Dame Civil and Environmental Seminar Series, October 25th 2022 South Bend, Indiana.

A Study of the Potential Impact of Dredging the Corpus Christi Ship Channel on Passive Particle Transport and Hurricane Storm Surge. The University of Texas at Austin at the University of Texas Marine Science Institute Seminar Series, April 8 2022 Port Aransas, Texas.

A Study of the Potential Environmental Impacts of Deepening the Corpus Christi Ship Channel in Southern Texas. The Oklahoma State University Environmental Graduate Seminar, March 10 2022, Stillwater Oklahoma.

An Automatically Stable FE Method With an Application to Shallow Water Modeling. The Babuška seminar at the Oden Institute for Computational Engineering and Sciences, January 29 2021, Austin, Texas.

Automatic Variationally Stable Analysis for FE Computations. Department of Mechanical Engineering, South Dakota School of Mines & Technology, November 17, 2019, Rapid City, South Dakota.

Automatic Variationally Stable Analysis for FE Computations. Department of Computer Science Seminar, AGH University, September 4, 2019, Krakow, Poland.

Automatic Variationally Stable Analysis for FE Computations. PDE Seminar, Faculty of Mathematics and Natural Sciences, university of Oslo, Jan 7 2019, Oslo, Norway.