

CMWR 2024 Conference Agenda

Sunday, September 29, 2024

12:30 pm - 5:30 pm	Biosphere 2 Guided Behind-the-Scenes Tour (Bus leaves from Tucson Marriott University Park at 12:30 pm and returns to the same location around 5:30 pm)
2:00 pm - 5:30 pm	Check-in (Graduate Hotel)
6:00 pm - 8:00 pm	Icebreaker and Opening Reception (Bear Down Gym)

Monday, September 30, 2024

7:00 am - 8:15 am	Check-in (Diamond Atrium)			
8:15 am - 8:30 am	Conference Opening (South Ballroom)			
8:30 am - 9:25 am	Keynote: Adapting reactive transport frameworks to describe critical zone structure and function. Speaker: Jenny Druhan Location: South Ballroom			
9:30 am - 10:30 am	Session 4A (Rincon Room) <i>Machine learning methods for remote sensing and satellite data.</i>	Session 6A (Santa Rita Room) <i>Model coupling, domain decomposition, and solvers for multiphysics problems.</i>	Session 7A (South Ballroom) <i>Transport and mixing in heterogeneous porous and fractured media across scales.</i>	Session 12A (Tucson Room) <i>Advances in computational modeling of vadose zone processes.</i>
10:30 am - 11:00 am	Morning Break (North Ballroom) (Coffee, Tea, and Snacks provided)			
11:00 am - 12:20 pm	Session 4B (Rincon Room) <i>Machine learning methods for remote sensing and satellite data.</i>	Session 6B (Santa Rita Room) <i>Model coupling, domain decomposition, and solvers for multiphysics problems.</i>	Session 7B (South Ballroom) <i>Transport and mixing in heterogeneous porous and fractured media across scales.</i>	Session 12B (Tucson Room) <i>Advances in computational modeling of vadose zone processes.</i>
12:20 pm - 1:50 pm	Lunch (North Ballroom)			
2:00 pm - 2:55 pm	Keynote: Computational geomechanics for a sustainable energy future. Speaker: Joshua White Location: South Ballroom			
3:00 pm - 4:20 pm	Session 5A (Rincon Room) <i>Computational modeling of subsurface processes for climate mitigation and energy transition.</i>		Session 7C (South Ballroom) <i>Transport and mixing in heterogeneous porous and fractured media across scales.</i>	Session 12C (Tucson Room) <i>Advances in computational modeling of vadose zone processes.</i>
4:20 pm - 6:00 pm	Poster Session I (Diamond Atrium) (Coffee, Tea, and Snacks provided)			

Tuesday, October 01, 2024

Keynote: 25 years of modeling and simulation of geological CO2 storage: learnings and way forward.

8:30 am - 9:25 am

Speaker: Sarah E. Gasda

Location: South Ballroom

9:30 am - 10:30 am

Session 5B (Rincon Room)

Computational modeling of subsurface processes for climate mitigation and energy transition.

Session 15A (Santa Rita Room)

Computational methods for coupled human-natural systems and decision making.

Session 7D (South Ballroom)

Transport and mixing in heterogeneous porous and fractured media across scales.

10:30 am - 11:00 am

Morning Break (North Ballroom) (Coffee, Tea, and Snacks provided)

11:00 am - 12:20 pm

Session 5C (Rincon Room)

Computational modeling of subsurface processes for climate mitigation and energy transition.

Session 15B (Santa Rita Room)

Computational methods for coupled human-natural systems and decision making.

Session 2A (South Ballroom)

Data-driven and physics-based machine learning methods for forecasting and knowledge discovery of surface hydrology.

Session 17A (Tucson Room)

Inverse problems in hydrological modeling: From parameter estimation to uncertainty quantification and model identification.

12:20 pm - 1:50 pm

Lunch (North Ballroom)

Lunch discussion: Future of Hydrology Master's Education

Facilitator: Ty Ferre

2:00 pm - 2:55 pm

Keynote: Using Machine Learning models for Predictions in Unmonitored Basins.

Speaker: Charu Varadharajan

Location: South Ballroom

3:00 pm - 4:20 pm

Session 5D (Rincon Room)

Computational modeling of subsurface processes for climate mitigation and energy transition.

Session 15C (Santa Rita Room)

Computational methods for coupled human-natural systems and decision making.

Session 2B (South Ballroom)

Data-driven and physics-based machine learning methods for forecasting and knowledge discovery of surface hydrology.

Session 17B (Tucson Room)

Inverse problems in hydrological modeling: From parameter estimation to uncertainty quantification and model identification.

4:20 pm - 6:00 pm

Poster Session II (Diamond Atrium) (Coffee, Tea, and Snacks provided)

Wednesday, October 02, 2024

Keynote: Self-similarity and vanishing diffusion in fluvial landscapes: theoretical and numerical challenges.

8:30 am - 9:25 am

Speaker: Amilcare Porporato

Location: South Ballroom

9:30 am - 10:30 am

Session 8A (Rincon Room)

Reactive transport modeling of hydrobiogeochemistry across scales.

Session 10A (Santa Rita Room)

Computational ecohydrology.

Session 2C (South Ballroom)

Data-driven and physics-based machine learning methods for forecasting and knowledge discovery of surface hydrology.

Session 18A (Tucson Room)

Stochastic hydrogeology.

10:30 am - 11:00 am

Morning Break (North Ballroom) (Coffee, Tea, and Snacks provided)

11:00 am - 12:20 pm

Session 8B (Rincon Room)

Reactive transport modeling of hydrobiogeochemistry across scales.

Session 10B (Santa Rita Room)

Computational ecohydrology.

Session 2D (South Ballroom)

Data-driven and physics-based machine learning methods for forecasting and knowledge discovery of surface hydrology.

Session 18B (Tucson Room)

Stochastic hydrogeology.

12:20 pm - 1:30 pm

Lunch (North Ballroom)

1:30 pm - 1:50 pm

Group photo (Stairs near Student Union Roundabout)

2:00 pm - 2:55 pm

Keynote: Direct modeling of foam transport in porous and fractured media.

Speaker: Maša Prodanović

Location: South Ballroom

3:00 pm - 4:20 pm

Session 13 (Rincon Room)

Computational modeling and model-data interaction for groundwater flow and contaminant transport.

Session 10C (Santa Rita Room)

Computational ecohydrology.

Session 3A (Tucson Room)

Data-driven and physics-based machine learning methods for forecasting and knowledge discovery of subsurface hydrology.

4:20 pm - 4:50 pm

Afternoon Break (North Ballroom) (Coffee, Tea, and Snacks provided)

4:50 pm - 6:10 pm

Session 9A (Rincon Room)

Advances in integrating surface and subsurface hydrological modeling.

Session 10D (Santa Rita Room)

Computational ecohydrology.

Session 1A (South Ballroom)

Pore-scale processes of multiphase flow, transport, and geomechanics: modeling, model-data interaction, numerical algorithms, and upscaling.

Session 16 (Tucson Room)

Leveraging computational advances for hydrologic science: Developments in high-performance computing, cloud platforms, and quantum computing.

6:30 pm - 9:00 pm

Banquet Dinner (North Ballroom)

Music by Jazztechs Band

Thursday, October 03, 2024

Keynote: Resolving sub-field hydrology: tile drainage, soil biogeochemistry, and crop productivity.

8:30 am - 9:25 am

Speaker: Kaiyu Guan

Location: South Ballroom

9:30 am - 10:30 am

Session 9B (Rincon Room)

Advances in integrating surface and subsurface hydrological modeling.

Session 11A (Santa Rita Room)

Advances in computational modeling of surface processes: debris flow, river ecosystems, and morphodynamics.

Session 1B (South Ballroom)

Pore-scale processes of multiphase flow, transport, and geomechanics: modeling, model-data interaction, numerical algorithms, and upscaling.

Session 3B (Tucson Room)

Data-driven and physics-based machine learning methods for forecasting and knowledge discovery of subsurface hydrology.

10:30 am - 11:00 am

Morning Break (North Ballroom) (Coffee, Tea, and Snacks provided)

11:00 am - 12:20 pm

Session 9C (Rincon Room)

Advances in integrating surface and subsurface hydrological modeling.

Session 11B (Santa Rita Room)

Advances in computational modeling of surface processes: debris flow, river ecosystems, and morphodynamics.

Session 1C (South Ballroom)

Pore-scale processes of multiphase flow, transport, and geomechanics: modeling, model-data interaction, numerical algorithms, and upscaling.

Session 3C (Tucson Room)

Data-driven and physics-based machine learning methods for forecasting and knowledge discovery of subsurface hydrology.

12:20 pm - 1:50 pm

Lunch (North Ballroom)

Keynote: Global flood inundation models: simulating 2D hydrodynamics at 30m resolution for the entire planet.

2:00 pm - 2:55 pm

Speaker: Paul Bates

Location: South Ballroom

3:00 pm - 3:30 pm

Conference Closing (South Ballroom)

Summary

Date	Keynote Speakers	Sessions
Monday, September 30	Jenny Druhan, Joshua White	4A-4B, 5A, 6A-6B, 7A-7C, 12A-12C
Tuesday, October 01	Sarah E. Gasda, Charu Varadharajan	2A-2B, 5B-5D, 7D, 15A-15C, 17A-17B
Wednesday, October 02	Amilcare Porporato, Maša Prodanović	1A, 2C-2D, 3A, 8A-8B, 9A, 10A-10D, 13, 16, 18A-18B
Thursday, October 03	Kaiyu Guan, Paul Bates	1B-1C, 3B-3D, 9B-9C, 11A-11B

