

Noah-MP Workshop & Tutorial Agenda

Workshop: May 23-24, 2023 two full days (8am-5pm, US Mountain Time)

Tutorial: May 25, 2023 half-day (8am-noon, US Mountain Time)

Location: **NCAR Foothills Lab FL2-1001** and remote

NCAR Foothills Lab: 3450 Mitchell Lane Boulder, CO 80301

May 23, 2023 (8am-5pm, Tuesday, US Mountain Time)

Time	Plan / Presentation title	Presenter/Note	In person / remote
7:30 - 8:00 am	Ice-breaking and hybrid setup	Cenlin He	In person
8:00 - 8:05 am	brief logistics and welcome	Cenlin He and Fei Chen	In person
8:05 - 8:20 am	NCAR/RAL/HAP director welcoming remarks	Roy Rasmussen (NCAR)	In person
Session 1. Noah-MP model development overview			
8:20 - 8:40 am	Noah-MP history & research overview at NCAR	Fei Chen (NCAR)	In person
8:40 - 9:00 am	Noah-MP physics & refactor (version 5.0) overview	Cenlin He (NCAR)	In person
9:00 - 9:20 am	Noah-MP research overview in UT Austin	Zong-Liang Yang (UT Austin)	In person
9:20 - 9:40 am	Noah-MP research overview in Univ of Arizona	Guo-Yue Niu (U of Arizona)	In person
9:40 - 10:00 am	Noah-MP development and coupled to CAMS global model in China	Guo Zhang (CMA, China)	Remote (14 hr ahead)
10:00 - 10:30 am	Coffee break & Group photo		
10:30 - 10:50 am	Noah-MP Operational Transition Overview at NOAA/EMC	Mike Barlage (NOAA/EMC)	In person
10:50 - 11:10 am	Noah-MP research overview in WRF-Hydro/NWM	Dave Gochis (NCAR)	In person
11:10 - 11:30 am	Overview of LIS and Noah-MP efforts and NCAR-NASA/GSFC strategic	David Mocko (NASA)	In person

	partnership		
11:30 - 11:50 am	Coupling of Noah-MP to the Korean Integrated Model (KIM)	Myung-Seo Koo (KIAPS, Korea)	In person
12:00 - 13:00 pm	Lunch (on your own)		
13:00 - 13:20 pm	Overview of the USAF's Global Hydro Intelligence system	Jerry Wegiel (NASA)	In person
13:20 - 13:40 pm	Noah-MP-Crop, Urban, and Humans- How do we get to putting it all together?	Dev Niyogi (UT Austin)	In person
Session 2. Hydrology			
13:40 - 13:55 pm	On the meteorological drought propagation into the hydrological system in Central Italy	Christian Massari (Italy)	Remote (8 hr ahead)
13:55 - 14:10 pm	Enhancing snow modeling with the Noah-MP land surface model	Ronnie Abolafia-Rosenzweig (NCAR)	In person
14:10 - 14:25 pm	Assimilation of blended in situ-satellite snow water equivalent into the National Water Model for improving hydrologic simulation in two US river basins	Yanjun Gan (University of Texas at Arlington)	remote
14:25 - 14:40 pm	Groundwater-fed irrigation impacts on terrestrial water cycle: a case study in North China Plain	Danqiong Dai (Canada)	In person
14:40 - 14:55 pm	Development and application of Plant hydraulics in Noah-MP at multiple scales	Lingcheng Li (PNNL)	Remote
14:55 - 15:10 pm	Modeling streamflow from melting glaciers	Trude Eidhammer (NCAR)	Remote
15:10 - 15:30 pm	Coffee break		
Session 3. Group discussion on Noah-MP Working Group & Code committee			
15:30 - 17:00 pm	Discussions on forming Noah-MP working group and code & physics review & release committee	Moderators: Cenlin He, Fei Chen	In person & remote
17:00 pm	Adjourn	Cenlin He	

17:00-19:00 pm	Reception (offered by NCAR)	FL-2 cafeteria	
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May 24, 2023 (8am-5pm, Wednesday, US Mountain Time)

Time	Plan / Presentation title	Presenter/Note	In person / remote
Session 4. Biogeochemistry and agriculture			
7:30 - 8:00 am	Social and hybrid setup	Cenlin He	In person
8:00 - 8:15 am	Climate simulations with the nitrogen dynamics enhanced WRF model	Xitian Cai (China)	Remote (14 hr ahead)
8:15 - 8:30 am	NoahMP developments and applications related to atmospheric chemistry	Min Huang (NASA)	Remote
8:30 - 8:45 am	Coupling the land surface model Noah-MP with the generic crop growth model Gecros	Joachim Ingwersen (University of Hohenheim, Germany)	Remote (8 hr ahead)
8:45 - 9:00 am	Agriculture Water Managements in Noah-MP Land Surface Model	Prasanth Valayamkunnath (IISER, India)	Remote (12hr ahead)
9:00 - 9:15 am	Noah-MP development and application for food-water nexus studies	Zhe Zhang (NCAR)	In person
9:15 - 9:30 am	Developing a seasonal wheat yield prediction system for Israel	Ehud Strobach (Israel)	In person
Session 5. Urban and Data assimilation			
9:30 - 9:45 am	Performance evaluation of a land-surface-physics-based downscaling approach for urban thermal environment prediction	Lingbo Xue (University of Tsukuba, Japan)	Remote (15hr ahead)
9:45 - 10:00 am	Impacts of Urbanization on Hurricane Rainfall using WRF model coupled with NoahMP	Wei Zhang (USU)	In person
10:00 - 10:15 am	Improve the performance of the Noah-MP model by hybridizing data	Xinlei He (Beijing Normal	Remote (14hr

	assimilation and machine learning	Univ)	ahead)
10:15 - 10:30 am	Coffee break		
10:30 - 10:45 am	Forward modeling with NoahMP within a data assimilation framework	Jawairia Ahmad (Pakistan)	Remote (11hr ahead)
10:45 - 11:00 am	The FEWS NET Land Data Assimilation System (FLDAS): Noah MP Land Surface Modeling for Food Security Applications	Kimberly Slinski (NASA)	In-Person
Session 6. Soil Moisture and weather/climate forecast			
11:00 - 11:15 am	The Effect of Dynamic Root Water Uptake on the Surface Water and Energy Fluxes of the U.S. Great Plains	Zhao Yang (PNNL)	In person
11:15 - 11:30 am	Implementing a dynamic rooting scheme in Noah-MP to capture deep root water uptake	Carolina Bieri (UIUC)	Remote (recorded video)
11:30 - 11:45 am	Accuracy of Surface and Root-zone Soil Moisture Analysis from Three Modeling systems During the 2022 Texas Drought	Farhad Hassani (The University of Texas at Arlington)	In person
11:45 - 12:00 pm	Seasonal soil freeze/thaw variability across North America via ensemble land surface modeling	Mahsa Moradi (U of New Hampshire)	In person
12:00 - 13:00 pm	Lunch (on your own)		
13:00 - 13:15 pm	Improving Forecast of Near-Surface Fields in the Unified Forecast System	Weizhong Zheng (NOAA/EMC)	In person
13:15 - 13:30 pm	Eta/Noah-MP model: Applications in South America	Isabel Pilotto (Brazil)	In person
13:30 - 13:45 pm	Medium-Range Forecasting over Afghanistan Using Noah	Abheera hazra (NASA)	Remote
13:45 - 14:00 pm	Noah-MP parameter optimization at southern great plains using Bayesian Optimization	Qingyu Wang (Univeristy of Oklahoma)	Remote
Session 7. Group discussion on future priorities & solutions			
14:00 - 15:30 pm	Break-out group discussions on Noah-	Moderators:	In person &

	MP future priorities and directions and possible solutions	Cenlin He, Fei Chen	remote
15:30 - 16:00 pm	Coffee break		
16:00 - 17:00 pm	Group report on discussion results for Noah-MP future priorities and directions	Moderators: Cenlin He, Fei Chen	In person & remote
17:00 pm	Workshop summary and adjourn	Cenlin He and organizing committee	

Noah-MP Tutorial Agenda
May 25, 2023 morning (8am-noon, Thursday, US Mountain Time)

Time	Plan	Instructor
7:45 - 8:00 am	hybrid setup & preparation	Cenlin He & Zhe Zhang
8:00 - 8:30 am	Lecture for Noah-MP physics, options, capabilities, coupling with other host models	Cenlin He
8:30 - 9:00 am	Lecture for the modernized Noah-MP version 5.0 GitHub structure, model structure and code	Cenlin He
9:00 - 9:30 am	hands-on exercise of running HRLDAS v5.0 forcing engine to generate forcing	Zhe Zhang
9:30 - 10:00 am	hands-on exercise of running offline Noah-MP v5.0 using HRLDAS/Noah-MP framework	Zhe Zhang
10:00 - 10:30 am	Coffee break	
10:30 - 11:30 am	Introduction to Noah-MP component model in NOAA's UFS	Ufuk Turuncoglu
11:30 - 12:00 pm	hands-on instruction of modifying code in Noah-MP v5.0 and submitting PR to GitHub	Zhe Zhang
12:00 pm	Adjourn	Cenlin He