Speakers Biography

Michael Duda

Michael Duda is a Software Engineer in the Mesoscale and Microscale Meteorology Laboratory at NCAR. He has over a decade of experience working with the Weather Research and Forecasting (WRF) model software, and he is one of the principal developers of the WRF Pre-Processing System, which he also actively maintains and supports to the user community. Michael is one of the primary architects of the Model for Prediction Across Scales (MPAS) software framework and infrastructure, and more recently, his work has focused on the computational performance of the atmosphere component of MPAS. He is particularly interested in extensible software design and algorithms of all sorts. Michael holds an M.S. in Computer Science from the University of Colorado.

Jimy Dudhia

Dr. Jimy Dudhia has worked on all aspects of atmospheric numerical weather prediction models being on the development and community support teams for MM5 and WRF. His scientific contributions and publications are in the areas of nonhydrostatic dynamics, microphysics, planetary boundary layer schemes, radiation schemes, and land-surface schemes. Application interest areas include mid-latitude and tropical convective cloud-scale modeling, hurricane forecasting, regional climate modeling, wind and solar energy relevant model development and large-eddy scale simulation.

Dave Gill

Dave Gill is a Senior Software Engineer in the Mesoscale and Microscale Meteorology Laboratory at NCAR. He started his involvement in NWP models with MM4 in the late 1980s. He wrote the system that transitioned the MM4 model from from batch-oriented COS to the interactive UniCOS, and then ported the Cray-based code to a generic Unix system. For the MM5 modeling system, he wrote the model pre- and post-processors, graphics package, the objective analysis program, and co-wrote the grib-data processor. He wrote the User Guide for the MM5 system. He is one of the original developers of the WRF system, specifically working with initialization, infrastructure, and nesting. He is part of the WRF tutorial team. He was the first person to conduct real-time forecasts on the NCAR supercomputers with the MM4 model, and has designed and implemented these operational systems for the Hong Kong Airport, the US Army, and the US Air Force. He has provided real-time systems in support of field campaigns. He has been part of the procurement process for the previous several supercomputers at NCAR, and serves on computing allocation committees. He chairs the committee which oversees the maintenace and updating of the WRF repository, and is one of the core WRF members that pushes out the annual releases of the WRF code. He is currently

working with an NSF-based project to make the WRF model more easily available to beginning graduate students.

Georg Grell

Dr. Georg Grell leads the development of the online WRF-chemistry model. The Weather Research and Forecast (WRF) model is a next generation Numerical Weather Prediction (NWP) model. Grell collaborates with scientists from many other NOAA laboratories, as well as other national and international institutes and universities on further development of WRF/Chem. Grell also is developing a new approach to parameterize convection using ensemble and data assimilation techniques, and is supervising the effort to develop chemical data assimilation 3DVAR methods for use in real-time air quality forecasting. Grell leads the WRF/Chem working group, http://wrf-model.org/WG11, is a member of the WRF Research and Applications Board, served as a member of the AMS committee on meteorological aspects of air pollution, is invited expert on a COST (European Corporation in the field of Scientific and Technical Research) action, and has given many invited seminars on WRF/Chem as well as convective parameterizations in Europe, Asia, and South America.

Joe Klemp

Dr. Klemp is a Senior Scientist and head of the Mesoscale Dynamics Section in the Mesoscale and Microscale Meteorology Laboratory. Since coming to NCAR in 1971, Klemp has conducted theoretical and modeling research to improve the understanding and prediction of severe weather phenomena such as downslope windstorms, tornadic thunderstorms, squall lines, density currents, and internal bores. Klemp is the NCAR coordinator for the joint agency development of the Weather Research and Forecasting (WRF) Model that is now being used widely for both university research and operational weather forecasting. The WRF model has been downloaded by over 32,000 users in more than 165 countries. Klemp is one of the principal architects of the WRF model numerics and is currently developing and testing numerical techniques for a new nonhydrostatic global Model for Prediction Across Scales (MPAS) that will be well suited for both weather and climate applications from global scales down to convection-resolving scales.

Klemp has co-authored over 100 journal articles and conference reports, and received twice the NCAR Outstanding Publication Award. He is a fellow of the American Meteorological Society and has served as Co-Chief Editor of the *Monthly Weather Review* and Publications Commissioner of the AMS. In recognition of his research and service accomplishments, Klemp has been awarded the AMS Clarence Leroy Meisinger Award (1983), the Charles Franklin Brooks Award (2011), and the Carl Gustaf Rossby Research Medal (2011).

Bill Skamarock

Dr. Skamarock is active in the development of fluid-flow solvers and atmospheric models, particularly nonhydrostatic solvers suitable for cloud-permitting simulations. He is one of the principal architects of the Weather Research and Forecast model. He is currently working on developing global solvers based on unstructured centroidal Voronoi tessellations and is leading NCAR's effort in the development of the Model for Prediction Across Scales (MPAS). Dr. Skamarock continues to work on problems in atmospheric dynamics at large scales (baroclinic waves), small scales (deep convection) and interactions between scales. He collaborates in studies of chemistry and chemical species transport in deep convective clouds.

He is also involved in the development of the global modeling system MPAS (Model for Prediction Across Scales). The modeling system uses a horizontal discretization based on Spherical Centriodal Voronoi Tessellations (SCVT's) that allow both a quasi-uniform discretization (the classical icosahedral mesh) and variable resolution meshes. Multiple geophysical solvers comprise the MPAS system, including atmosphere, ocean, and ice models. MPAS is being jointly developed by NCAR and DOE's Los Alamos National Labs, with NCAR leading the atmospheric component development, LANL the ocean model development, and the infrastructure being jointly developed. The web site for the MPAS project is http://mpas-dev.github.io/

Wei Wang

Dr. Wei Wang is a project scientist in the Mesoscale and Microscale Meteorology Laboratory, NCAR. She works with many aspects of numerical weather prediction models, and has been providing community support for MM5 in the past and WRF in recent years. Her research areas include conduct, evaluate and improve real-time convection and hurricane forecasts using the WRF and MPAS models. She is currently an associate editor for Asia-Pacific Journal of Atmospheric Sciences.

Kelly Werner

Kelly K. Werner is an associate scientist working in the Mesoscale and Microscale Meteorology (MMM) Lab. She primarily works with the WRF support team to assist users with WRF model problems and questions. She is the coordinator of the WRF Tutorials both locally and on remote campuses, and teaches various classes during the Tutorials. Her areas of interest within the model are compilation, the WRF Preprocessing System, and Post-processing programs. She also conducts tests for WRF code releases, updates and edits WRF user documentation, and is the web specialist for the Mesoscale Prediction Section within MMM.