

Last updated: Friday, 21 September 2018

18th Workshop on high performance computing in meteorology



24 – 28 September 2018

Programme

Monday 24 September		
09:00	<i>Registration and coffee</i>	Weather Room
09:45-10:00	Welcome and opening	Isabella Weger (ECMWF)
Session Chair: Isabella Weger (ECMWF)		
10:00-10:30	ECMWF's research directions	Andy Brown (ECMWF)
10:30-11:00	High resolution simulations with ICON: lessons learned	Luis Kornblueh (Max Planck Institute for Meteorology)
11:00-11:30	<i>Coffee break</i>	Concourse and Lobby
Session Chair: Peter Bauer (ECMWF)		
11:30-12:00	DWD's operational roadmap: Implications for computation, data management and data analysis	Florian Prill (DWD)
12:00-12:30	Computational aspects and performance evaluation of the IFS-XIOS integration	Xavier Yepes Arbós (Barcelona Supercomputing Center)
12:30-13:00	NCAR's computing directions	Anke Kamrath (UCAR)
13:00-14:15	<i>Lunch break</i>	
Session Chair: Paul Burton (ECMWF)		
14:15-14:45	Met Office HPC update	Paul Selwood (Met Office)
14:45-15:15	Highly efficient parallel Kalman smoothing for re-analysis	Tuomo Kauranne (Lappeenranta University of Technology)
15:15-15:30	Introduction to vendor exhibition	
15:30-16:00	<i>Coffee break</i>	Concourse and Lobby
16:00-17:30	Vendor exhibition Optional Computer Hall tours	Classroom Computer Hall
17:30	<i>Drinks reception</i>	Weather Room / Lobby

Tuesday 25 September		
Session Chair: Olivier Marsden (ECMWF)		
09:00-10:00	Keynote address: How Arm's entry into the HPC market might affect meteorological codes	Simon McIntosh-Smith (University of Bristol)
10:00-10:30	Progress report on ECMWF's scalability programme	Peter Bauer (ECMWF)
10:30-11:00	The European HPC strategy and implementation	Andrea Feltrin (European Commission)
11:00-11:30	<i>Coffee break</i>	<i>Concourse and Lobby</i>
Session Chair: Peter Dueben (ECMWF)		
11:30-12:00	The EuroEXA Project - Co-Design for HPC from facility to application	Peter Hopton (Iceotope)
12:00-12:30	Energy-efficient Scalable Algorithms for Weather Prediction at Exascale (ESCAPE)	Nils Wedi (ECMWF)
12:30-13:00	ESiWACE, the Center of Excellence for Climate and Weather Simulation in Europe	Joachim Biercamp (DKRZ)
13:00-14:15	<i>Lunch break</i>	
Session Chair: Antonino Bonanni (ECMWF)		
14:15-14:45	EPiGRAM-HS: Programming Models for Heterogenous Systems at Exascale	Erwin Laure (KTH)
14:45-15:15	The NextGenIO project	David Henty (EPCC)
15:15-15:45	<i>Coffee break</i>	<i>Concourse and Lobby</i>
Session Chair: Simon Smart (ECMWF)		
15:45-16:15	Towards Enabling Memory- and Data-Aware HPC	Dirk Pleiter (Forschungszentrum Juelich)
16:15-17:30	Panel: European research roadmap towards Exascale	Chair: Andrea Feltrin
17:30	<i>Drinks and vendor exhibition</i>	

Wednesday 26 September		
Session Chair: Nils Wedi (ECMWF)		
09:00-10:00	Keynote address: Tackling the Simulation and Analysis Frontiers of Atmospheric and Earth System Science	Richard Loft (NCAR)
10:00-10:30	Machine learning applied to Satellite Observations	Jebb Stewart (Colorado State University - CIRA)
10:30-11:00	An update of HPC at the JMA	Toshiharu Tauchi (Japan Meteorological Agency)
11:00-11:30	<i>Coffee break</i>	<i>Concourse and Lobby</i>
Session Chair: Paddy Gillies (ECMWF)		
11:30-12:00	The Influence of Exascale Architectures on Earth System Modeling in NASA	William M. Putman (CISTO, NASA GSFC)
12:00-12:30	Performance Study of Climate and Weather Models: Towards a More Efficiently Operational IFS	Mario Acosta Cobos (Barcelona Supercomputing Center)
12:30-13:00	Modernizing U. S. Navy NWP Operations: Toward Distributed HPC	Timothy Whitcomb (US Naval Research Laboratory)
13:00-14:15	<i>Lunch break</i>	
Session Chair: Iain Miller (ECMWF)		
14:15-14:45	Supercomputing at the US National Weather Service	Rebecca Cosgrove (NOAA/National Weather Service)
14:45-15:15	Premier implementation of GRAPES-GLB on Sunway Taihu Light	Zhiyan Jin (National Meteorological Center of China)
15:15-15:45	<i>Coffee</i>	<i>Concourse and Lobby</i>
Session Chair: Filip Vana (ECMWF)		
15:45-16:15	Reduced Precision Computing for Numerical Weather Prediction	Leo Saffin (University of Oxford)
16:15-16:45	Variable-resolution weather and climate modeling using GFDL FV3	Lucas Harris (NOAA/GFDL)
16:45-17:15	Developing NEPTUNE on HPC for U.S. Naval Weather Prediction	John Michalakes (UCAR/Naval Research Laboratory)
17:30-18:30	<i>Pre-dinner drinks</i>	<i>Weather Room / Lobby</i>
18:30	<i>Workshop dinner</i>	<i>ECMWF Restaurant</i>
20:30	<i>Coach transport to Reading town centre</i>	

Thursday 27 September

Session Chair: Tiago Quintino (ECMWF)

09:00-10:00	Keynote address: A (c)loud revolution in meteorology and climate	Wilco Hazeleger (eScience Center)
10:00-10:30	Towards a new dynamical kernel in GEM	Vivian Lee (Environment and Climate Change Canada)
10:30-11:00	An Update of CMA HPC System	Min Wei (CMA)
11:00-11:30	<i>Coffee break</i>	<i>Concourse and Lobby</i>

Session Chair: Willem Deconinck (ECMWF)

11:30-12:00	Model Development Activities at NOAA Targeting Exascale	Mark Govett (NOAA Earth System Research Laboratory)
12:00-12:30	Modernizing Scientific Software Development	Christopher Harrop (Cooperative Institute for Research in Environmental Sciences)
12:30-13:00	OMNI/O: A Tool for I/O Recording, Analysis, and Replay	Bryan Flynt (Colorado State University)
13:00-14:15	<i>Lunch break</i>	

Session Chair: Deborah Salmond (ECMWF)

14:15-14:45	Running ARPEGE-NH at 2.5km	Philippe Marguinaud (Météo-France)
14:45-15:15	Overcoming Storage Issues of Earth-System Data with Intelligent Storage Systems	Julian Kunkel (University of Reading)
15:15-15:45	<i>Coffee break</i>	<i>Concourse and Lobby</i>
16:00-17:15	Panel: Convergence of HPC and the Cloud	Chair: Dan Still
17:15	<i>Drinks and vendor exhibition</i>	<i>Weather Room / Lobby</i>

Friday 28 September

Session Chair: Sami Saarinen (ECMWF)

09:00-09:30	Prototyping an in-situ visualisation mini-app for the LFRic project	Samantha Adams (Met Office)
09:30-10:00	FPGA Acceleration of the LFRic Weather and Climate Model in the EuroExa Project Using Vivado HLS	Mike Ashworth (University of Manchester)
10:00-10:30	Accelerating Weather Prediction with NVIDIA GPUs (ESCAPE project)	Alan Gray (NVIDIA)
10:30-11:00	<i>Coffee break</i>	<i>Concourse and Lobby</i>

Session Chair: Tomas Wilhelmsson (ECMWF)

11:00-11:30	Optimisation of Data Movement in Complex Workflows (MAESTRO and EIPGRAM-HS)	Harvey Richardson (Cray EMEA Research Lab)
11:30-12:00	WRF-GO: a workflow manager for low latency meteo predictions and applications	Emanuele Danovaro (CIMA)
12:00-12:30	Implications of moving towards a Continuous Data Assimilation system	Peter Lean (ECMWF)
12:30-12:45	Closing remarks	
12:45	<i>End of workshop</i>	

Vendor exhibition

Applying DDN to machine learning	Jean-Thomas Acquaviva (DDN Storage)
HPE	Simon Appleby (Hewlett Packard Enterprise)
Challenges and Solutions for Data-Intensive Earth Sciences Work	Ilene Carpenter (Cray Inc)
Mellanox Technologies	Steve Davey (Mellanox Technologies)
ATOS	Andy Grant (ATOS)
New developments at the Portland Group	David Norton (The Portland Group/NVIDIA)
NVIDIA HPC and AI Developments for Earth System Modelling	Stan Posey (NVIDIA Corporation)
Porting RAPS to the ARMV8-A architecture	Philip Ridley (Arm Ltd)
Introducing a powerful general purpose CPU accelerates Arm HPC ecosystem prosperity	Toshiyuki Shimizu (Fujitsu Limited)
Intel Corporation	Toby Smith (Intel Corporation)
IBM in HPC and a focus on weather and climate	Francois Thomas (IBM France)
Verne Global hpcDIRECT	Wil Wellington (Verne Global)