

Advanced Dynamical Core Modeling for Atmospheric and Oceanic Circulations Program Agenda

DATE	18-02-2013	19-02-2013	20-02-2013	21-02-2013	22-02-2013	23-02-2013
09:10-09:30	Registration	Group photograph				
09:30-11:10	Inaugural Session (09:45-11:10)	Session I-B	Session II – A	Session III – A	Session IV – A	Session V
11:10-11:40	Tea and Snack Break					
11:40-13:20	Session I - A	Session I-B	Session II – B	Session III – A	Session IV – B	Session V
13:20-14:20	Lunch Break					
14:20-16:50	Session I - A	Session I-C	Session II – C	Session III – B	LAB VISIT	Session – VI Contributory Talks
16:50-17:10	Tea and Snack Break					
17:10-18:30	HOT-I	SEL	HOT-II	HOT-III	HOT-IV	Panel Discussion and Valedictory session
18:30	High Tea & Departure to Tirupati					
19:30	Dinner hosted by Director NARL					
<p>Session I A : Dynamical Core Modeling – Atmosphere I B : Dynamical Core Modeling – Mesoscale Modeling I C : Dynamical Core Modeling – Stability, Initialization and Assimilation II A : Numerical Modeling – Semi implicit - Lagrangian methods II B : Numerical Modeling – Ocean II C : Numerical Modeling –Discretization and Multi-scale Character III A : Coupled models - conservations and practical considerations III B : Coupled models – couplers and coupling processes IV A : Application of Computational Fluid Dynamics-Scale Interactions/Coupling Technologies IV B : Application of Computational Fluid Dynamics-Physics V : Scalable, Efficient, Parallel Computational Environments VI : Contributory Lectures</p> <p>HOT: Hands on Training SEL: Special Evening Lecture</p>						

Advanced Dynamical Core Modeling for Atmospheric and Oceanic Circulations Program Agenda

Monday, February 18, 2013	
09:10 – 09:45	Registration
09:45 – 11:10	Inaugural Session Welcome Address - Prof A Jayaraman, Director, NARL Inaugural Address – Padmavibhushan Prof. Roddam Narasimha Introduction to ADCMAOC-2013
11:10 – 11:40	Tea and Snack Break
Session I A: Dynamical Core Modeling - Atmosphere <div style="text-align: right;">Session Chair: Prof Song-You Hong, Yonsei University</div>	
11:40 – 12:30	Advanced Dynamical Core Modeling for Atmosphere: current development and future plan <div style="text-align: right;">Dr. Hann-Ming (Henry) Juang, NOAA</div>
12:30 – 13:20	The global nonhydrostatic atmospheric model MPAS <div style="text-align: right;">Dr. Jimy Dudhia, NCAR</div>
13:20 – 14:20	Lunch break
Session IA Contd.: Dynamical Core Modeling – Atmosphere <div style="text-align: right;">Session Chair: Dr. Hann-Ming (Henry) Juang, NOAA</div>	
14:20 - 15:10	Multi-scale climate modeling using geodesic grids techniques - Lecture 1 <div style="text-align: right;">Dr. Todd D Ringler, LANL</div>
15:10 – 16:00	Global finite – volume non-hydrostatic Icosahedral Model <div style="text-align: right;">Prof. Jin Lee, GSD, ESRL</div>
16:00 to 16:50	Meso-scale modeling of extreme weather events in tropics – lecture 1 <div style="text-align: right;">Prof U C Mohanty, IIT Delhi</div>
16:50– 17:10	Tea and Snack Break
17:10 – 18:30	HOT 1: Formulation and discretization (Finite Difference / Element) of Shallow Water equations over 2-D Sphere. <div style="text-align: right;">Dr G C Satyanarayana, NARL</div>
18:30	High Tea and Departure to Tirupati
19:30- onwards	Dinner hosted by Director NARL (Venue Hotel Grand World, Tirupati)

Tuesday, February 19, 2013	
9:00 – 09:30	Group Photograph
Session I B: Dynamical Core Modeling – Mesoscale Physics	
Session Chair: Dr. Jimy Dudhia, NCAR	
09:30 – 10:20	A View on the Predictability of Tropical Cyclogenesis with a Global Mesoscale Model Dr. Bo-Wen Shen, GSFC, NASA
10:20 – 11:10	Meso-scale modeling of extreme weather events in tropics – Lecture 2 Prof U C Mohanty, IIT Delhi
11:10 – 11:40	Tea and Snack Break
Session I B Contd. : Dynamical Core Modeling – Mesoscale Physics	
Session Chair: Prof. Jin Lee, ESRL	
11:40 - 12:30	Regional Atmospheric Modeling using WRF-ARW for seasonal scale monsoon and short-range tropical cyclones Dr. C V Srinivas, IGCAR
12:30 - 13:20	BOB Cyclone Aila Moisture Effects on Heavy Rain Dr. Mohan Kumar Das, SMRC
13:20 – 14:20	Lunch break
Session I C: Dynamical Core Modeling – Stability, Initialization and Assimilation	
Session Chair: Dr. Bo-Wen Shen, GSFC, NASA	
14:20-15:10	Stability of partial differential equations of dynamical core. Dr A S Vasudeva Murthy, ICTS, TIFR
15:10-16:00	Data Assimilation and Model Initialization Dr. Amit Apte, ICTS, TIFR
16:00-16:50	Data Assimilation and modeling efforts for operational forecasts in nowcast to medium range time scale at India Meteorological Department Dr. S.K. Roy Bhowmik, IMD New Delhi
16:50 – 17:10	Tea and Snack Break
17:10 - 18:00	SEL: Dynamical weather forecasts for Space Launch Operations Dr. V Seshagiri Rao, SDSC, SHAR
18:00	High Tea and Departure to Tirupati

Wednesday, February 20, 2013

Session II A: Numerical Modeling – Semi implicit - Lagrangian methods

Session Chair: Dr. Todd Ringler, LANL

09:30 – 10:20	Semi implicit and Semi Lagrangian methods	Prof A Chandrasekher, IIST
10:20 – 11:10	Advanced Numerical Methods for Atmospheric Modeling	Dr Ramachandra D. Nair, NCAR
11:10 – 11:40	Tea and Snack Break	

Session II B: Numerical Modeling - Ocean

Session Chair: Prof Mahendra Varma, IIT Kanpur

11:40 - 12:30	Model for Prediction across scales- Ocean – Lecture 2	Dr. Todd Ringler, LANL
12:30 - 13:20	High resolution Indian Ocean Modeling, Indian Ocean Modeling, problems & prospects	Prof. P. N. Vinaychandran, IISc Bangalore
13:20 – 14:20	Lunch break	

Session II C: Numerical Modeling – Discretization and Multi-scale Character

Session chair : Dr Ramachandra D. Nair, NCAR

14:20-15:10	Discretization methods used in NWP: A Review	Prof P N Sen, University of Pune
15:10-16:00	Discretization using Spectral transform in GSM, RSM, GFS, CFS:	Prof. Hann-Ming Henry Juang, NOAA
16:00-16:50	A variable resolution global spectral method with finely resolved tropics	Dr. S. Janaki Raman, CDAC Bangalore
16:50 – 17:10	Tea and Snack Break	
17:10 – 18:30	HOT II: Formulation and discretization (Finite Volume) of Shallow Water equations over 2-D Sphere.	Ms M Varalakshmi, VIT
18:30	High Tea and Departure to Tirupati	

Thursday, February 21, 2013

Session III A: Climate System Modeling – Part I

Session chair: Prof Richard Dana Loft, CISL, NCAR

9:30 – 10:20	CMC–MRB Global Environmental Multiscale (GEM) Model Prof. Jean Côté ESCER Center
10:20 – 11:10	Flexible Modeling System GFDL Prof. V Balaji, Princeton University
11:10 – 11:40	Tea and Snack Break

Session III A Contd.: Climate System Modeling – Part II

Session chair : Prof. V Balaji, Princeton University

11:40 – 12:30	Global/Regional Integrated Modeling system (GRIMs) Prof Song-You Hong, Yonsei University
12:30 – 13:20	Numerical methods supporting the multi-scale character of ocean and atmosphere processes - lessons from modeling the 2004 Indian Ocean tsunami. Prof. Jörn Behrens, Hamburg University
13:20 – 14:20	Lunch break

Session III B: Coupled models – coupling processes

Session chairs: Prof. Jörn Behrens, Hamburg University

14:20 – 15:10	Climate signals from Himalayan Glaciers and implications for climate models Prof R Shankar, IMSc
15:10 – 16:00	Bio-geo-chemical, aerosol coupling in coupled models - Dr. S Ramachandran, PRL
16:00 – 16:50	Simulation of coastal flooding due to storm surges using moving boundary treatment in the numerical model Prof A D Rao, IIT Delhi
16:50- 17:20	Tea Break
17:20 – 18:10	HOT 3: Application of Spectral Transform for discretization of Shallow Water equations over 2-D Sphere. Mr M. Midhun, PRL
18:30	High Tea and Departure to Tirupati

Friday, February 22, 2013

Session IV A: Application of Computational Fluid Dynamics – Scale Interactions / Coupling Technologies

Session Chair: Prof A D Rao, IIT Delhi

9:30 – 10:20	Scale Interactions of Tropical Waves and Tropical Cyclone Formation as Revealed by NASA Advanced Technologies Dr. Bo-Wen Shen, GSFC, NASA
10:20 – 11:10	OASIS3-MCT & Open-PALM: 2 open source codes couplers Dr. Anthony Thevenin, CERFACS
11:10 – 11:40	Tea and Snack Break

Session IV B: Application of Computational Fluid Dynamics – Physics

Session chair: Prof P N Sen, University of Pune

11:40 – 12:20	Physics of convective turbulence Prof Mahendra Varma , IIT Kanpur
12:20 – 13:20	Dissipative Hamiltonian Dynamics for atmosphere, ocean and Climate Modeling, Dr. Amit Kesarkar, NARL
13:20 – 14:20	Lunch break
14:20 – 16:50	NARL LAB Visit Coordinator: Mr T Rajendra Prasad, NARL
16:50- 17:10	Tea and Snack Break
17:10-18:30	HOT 4: Semi-Lagrangian Methods for discretization of Shallow Water equations over 2-D Sphere. Ms Jyoti Bhate, NARL
18:30	High Tea and Departure to Tirupati

Saturday, February 23, 2013

Session V: Scalable, Efficient, Parallel Computational Environments – Part I

Session chair : Prof. Jean Côté, ESCER Center

09:30 - 10:20	The Challenges of Massively Parallel Computing, Prof. Richard Dana Loft, CISL, NCAR
10:20 – 11:10	Parallel Computational Environments for modeling of atmospheric and oceanic flows Prof. Ravi S Nanjundiah, IISc
11:10 – 11:40	Tea and Snack Break

Session V Contd. ...: Scalable, Efficient, Parallel Computational Environments – Part II

Session chair: Prof. Ravi S Nanjundiah, IISc

11:40– 12: 20	HPC / Petascale computing, HPC, paradigm multi-core architecture, challenges in handling huge climate data Dr. Valentine Anantharaj, ORNL
12:20 – 13:20	Challenges in parallelization of atmospheric and oceanic models on Cluster of multicore systems with HPC Accelerators Dr. V C V Rao, C-DAC, Pune
13:20 – 14:20	Lunch break

Session VI : Contributory Lectures

Session chair: Dr. Valentine Anantharaj, ORNL

14:30-14:40	Numerical Investigation of Tidal and Residual Circulation in the Gulf of Khambhat and its surrounding on the West Coast of India, Dr Rabindrakumar Nayak, NRSC
14:40-14:50	Implementation of LDAS over India for Thunderstorm Dr Krishna kishore Osuri, IIT Delhi
14:50-15:00	Dynamical core of the LMDZ weather model on GPGPU Dr Sourav Mukherjee, IIT Delhi
15:00-15:10	Simulation of Diurnal Cycle of Convection and Rainfall in Global and Regional Models Ms Jyoti Bhate, NARL
15:10-15:20	Understanding the Special features of cyclone Aila (2009) after landfall Ms Radhika Kanase & Dr P. S. Salvekar, IITM
15:20-15:30	Numerical Simulation and Intercomparison of Boundary Layer Structure with six PBL schemes at a Tropical coastal site Kalpakam with experimental observations Mr K B R R Hariprasad, IGCAR
15:30-15:40	Numerical simulation of the Tropical Cyclone NILAM with WRF-ARW and comparison with meteorological tower and Doppler Weather Radar observations during landfall. Ms Greeshma, IGCAR
15:40-15:50	Anthropogenic changes on the dynamics of the low latitude mesosphere: Observations and model simulations Dr. Venkat Ratnam, NARL

Saturday, February 23, 2013continued

15:50-16:00	Middle Atmospheric Climate Change over Indian Low Latitude Region: Modeling and Observations Dr Som Kumar Sharma, PRL
16:00– 16:10	Mesospheric wave characteristic and there comparison with existing dynamical and photochemical models for OH emission over low latitude Dr R. N. Ghodpage, IIG Kolahpur
16:10-16:20	Role of electric field in producing turbulence in middle atmosphere Prof S P Gupta, PRL
16:20- 16:30	The Nocturnal Monthly and Latitudinal Variation in Characteristics of the Zonal Velocities of the Plasma Bubble over the Low Latitude (Kolhapur 16.42° N, 74.2° E, And 10.6° N dip Lat) Region Mr D. P. Nade, Shivaji University
16:30-16:40	Effect of solar activity on galactic cosmic ray and global warming Dr Bhupendra Kumar Tiwari, APS University
16:40-16:50	Study of Longitudinal and Latitudinal variations in the signal strength pattern of cosmic radio noise using riometers at southern and northern hemispheres Dr S. S. Nikte, Shivaji University
16:50-17:10	Tea and Snack Break
17:10 – 18:30	Panel Discussion and Valedictory session
18:30	High Tea and Departure to Tirupati