

**The Third Santa Fe Conference on Global and Regional Climate Variability, October 31-November 4, 2011  
Final Schedule of Presentations**

**Monday Morning, October 31, 2011**

Registration and continental breakfast .....7:20-8:20  
Welcome: Duncan McBranch, LANL, Deputy Principal Associate Director ..... 8:20-8:30  
Introduction: Petr Chylek, Conference Chair ..... 8:30-8:40

**M-I: Models, Forcing, and Feedbacks (Chairs: Jerry North and V. Ramaswamy)**

M-1: P. Huybers (Harvard) Regional Temperature Predictions from a Minimalist Model ..... 8:50-9:10  
M-2: J. Curry (Georgia Tech) A Critical Look at the IPCC AR4 Climate Change Detection and Attribution ..... 9:10-9:30  
M-3: R. Lindzen (MIT) Climate v. Climate Alarm ..... 9:30-9:50  
M-4: A. Tsonis (Wisconsin) A new dynamical mechanism for major climate shifts..... 9:50-10:10

*Discussion* ..... 10:10-10:25

Coffee and Refreshment ..... 10:25-10:55

**M-II: Aerosols and Clouds (Chairs: Hans von Storch and Jon Reisner)**

M-5: P. Rasch (PNNL) Exploration of aerosol, cloud and dynamical feedbacks in the climate-cryosphere system ..... 10:55-11:15  
M-6: D. Rosenfeld (Hebrew U Jerusalem) Number of activated CCN as a key property in cloud-aerosol interactions ..... 11:15-11:35  
M-7: W. Cotton (CSU) Potential impacts of aerosols on water resources in the Colorado River Basin ..... 11:35-11:55  
M-8: B. Stevens (Max Planck Institute) The Cloud Conundrum ..... 11:55-12:15

*Discussion* ..... 12:15-12:30

**Monday Afternoon, October 31**

**M-III: The Arctic (Chairs: Peter Webster and William Lipscomb)**

M-9: I. Polyakov (U Alaska) Recent and Long-Term Changes in the Arctic Climate System..... 2:00-2:20  
M-10: J. Sedlacek (ETH Zurich) Impact of a reduced sea ice cover on lower latitudes ..... 2:20-2:40  
M-11: S. Mernild (LANL) Accelerated melting and disappearance of glaciers and ice caps..... 2:40-3:00  
M-12: D. Easterbrook (Western Washington U) Ice core isotope data: The past is the key to the future ..... 3:00-3:20  
  
*Discussion*..... 3:20-3:35  
  
Coffee and Refreshment ..... 3:35-4:05

**M-IV: Models, Forcing, and Feedbacks (Chairs: Anastasios Tsonis and Anjali Bamzai)**

M-13: J-S von Storch (Max Planck Institute) Dynamical impact of warming pattern ..... 4:05-4:25  
M-14: Q. Fu (U Washington) Warming in the tropical upper troposphere: Models versus observation ..... 4:25-4:45  
M-15: S. Schwartz (BNL) Earth’s transient and equilibrium climate sensitivities ..... 4:45-5:05  
M-16: R. Salawitch (U Maryland) Impact of aerosols, ocean circulation, and internal feedbacks on climate ..... 5:05-5:25  
M-17: N. Andronova (U Michigan) Climate sensitivity and climate feedbacks ..... 5:25-5:45  
  
*Discussion*..... 5:45-6:00  
  
**Poster Session P-I** (with Refreshment)..... 6:00-8:00

	<b>Poster Session P-I</b>	<b>Monday, October 31</b>
<b>Chairs:</b>		<b>Graeme Stephens, Roger Davies, and Brad Flowers</b>
PM-1	Tim Garret, U Utah	Will a warmer Arctic be a cleaner Arctic?
PM-2	H. von Storch, A. Bunde, Inst. of Coastal Res., Germany	Examples of using long term memory in climate analysis
PM-3	P. Chylek, C. Folland, et al LANL, UK Met Office	Observed and model simulated 20 <sup>th</sup> century Arctic temperature variability: Anthropogenic warming and natural climate variability
PM-4	K. McKinnon, P. Huybers, Harvard U	The fingerprint of ocean on seasonal and inter-annual temperature change
PM-5	Anthony Davis, JPL	Frontiers in Remote Sensing: Multi-Pixel and/or Time-Domain Techniques
PM-6	Christopher Monckton	Is CO <sub>2</sub> mitigation cost-effective?
PM-7	H. Moosmuller, et al Desert Res. Inst., U Nevada	A Development of a Super-continuum Photoacoustic Aerosol Absorption and Albedo Spectrometer for the Characterization of Aerosol Optics
PM-8	H. Inhaber, Risk Concept	Will Wind Fulfill its Promise of CO <sub>2</sub> Reductions?
PM-9	M. Chen, J. Rowland, et al LANL	Temporal and Spatial Patterns in Thermokarst Lake Area Change in Yukon Flats, Alaska: an Indication of Permafrost Degradation
PM-10	M. Kafatos, H. El-Askary, et al Schmid College, WMO	Multi-Model Simulations and satellite observations for Assessing Impacts of Climate Variability on the Agro-ecosystems
PM-11	C. Xu, et al, LANL, NCAR	Toward a mechanistic modeling of nitrogen limitation on vegetation dynamics
PM-12	H. Hayden, U Connecticut	Doing the Obvious: Linearizing
PM-13	L. Hinzman, U Alaska	The Need for System Scale Studies in Polar Regions
PM-14	X. Jiang, et al, LANL, NCAR	Regional-scale vegetation die-off in response to climate Change in the 21 <sup>st</sup> century

## Tuesday Morning, November 1

Registration and continental breakfast..... 7:30-8:30

### **T-I: Models, Forcing and Feedbacks (Chairs: Peter Huybers and Joel Rowland)**

T-1: V. Ramaswamy (NOAA GFDL) Addressing the leading scientific challenges in climate modeling,..... 8:30-8:50

T-2: P. Webster (Georgia Tech) Challenges in deconvoluting internal and forced climate change ..... 8:50-9:10

T-3: H. von Storch (Institute for Coastal Research, Hamburg) Added value generated by regional climate models..... 9:10-9:30

T-4: A. Solomon (U Colorado) Decadal predictability of tropical Indo-Pacific Ocean temperature trends..... 9:30-9:50

*Discussion* ..... 9:50-10:05

Coffee and Refreshment ..... 10:05-10:35

### **T-II: Observations (Judy Curry and Manvendra Dubey)**

T-5: S. Wofsy (Harvard) HIAPER Pole to Pole Observations (HIPPO) of climatically important gases and aerosols ..... 10:35-10:55

T-6: R. Muller (UC Berkeley) The Berkeley Earth Surface Temperature Land Results ..... 10:55-11:15

T-7: R. Rohde (Berkeley Temp Project) A new estimate of the Earth land surface temperature ..... 11:15-11:35

T-8: F. Singer (SEPP) Is the reported global surface warming of 1979 to 1997 real? ..... 11:35-11:55

T-9: J. Xu (NOAA) Evaluation of temperature trends from multiple Radiosondes and Reanalysis products..... 11:55-12:15

*Discussion*..... 12:15-12:30

## Tuesday Afternoon, November 1

### **T-III: Cosmic Rays, and the Sun (Chairs: Don Wuebbles and Anthony Davis)**

T-10: P. Brekke (Space Center, Norway) Does the Sun Contribute to climate change? An update .....	2:00-2:20
T-11: G. Kopp (U Colorado) Solar irradiance and climate .....	2:20-2:40
T-12: A. Shapiro (World Radiation Center, Davos) Present and past solar irradiance: a quest for understanding .....	2:40-3:00
T-13: B. Tinsley (U Texas) The effects of cosmic rays on CCN and climate .....	3:00-3:20
<i>Discussion</i> .....	3:20-3:35
Coffee and Refreshment .....	3:35-4:05

### **T-IV: Aerosols and Clouds (Chairs: William Cotton and Daniel Rosenfeld)**

T-14: J. Vernier (NASA Langley) Accurate estimate of the stratospheric aerosol optical depth for climate simulations .....	4:05-4:25
T-15: J. Coakley (Oregon SU) Knowledge gained about marine stratocumulus and the aerosol indirect effect.....	4:25-4:45
T-16: G. Stephens (NASA JPL) Clouds, aerosols, radiation, rain and climate .....	4:45-5:05
T-17: J. Augustine (NOAA) Surface radiation budget measurements from NOAA's SURFRAD network.....	5:05-5:25
T-18: G. Jennings (Ireland National U) Direct Radiative Forcing over the North East Atlantic .....	5:25-5:40
<i>Discussion</i> .....	5:40-5:55
<b>Banquet</b> .....	6:30-8:00
B-1: Judy Curry (Georgia Tech) The uncertainty monster at the climate science-policy interface	
B-2: Anjali Bamzai (NSF) Global and regional climate change research at NSF: Current activity and future plans	

## Wednesday Morning, November 2

Registration and continental breakfast..... 7:10-8:10

### **W-I: Weather, Climate, and Arctic Terrestrial Processes (Chairs: Larry Hinzman and Cathy Wilson)**

W-0: T. Schuur (U Florida) Vulnerability of Permafrost Carbon Research Coordination Network ..... 8:10-8:30

W-1: H. Epstein (U Virginia) Recent dynamics of arctic tundra vegetation: Observations and modeling..... 8:30-8:50

W-2: E. Euskirchen (U Alaska) Quantifying CO<sub>2</sub> fluxes across permafrost and soil moisture gradients in arctic Alaska ..... 8:50-9:10

W-3: D. Lawrence (NCAR) High-latitude terrestrial climate change feedbacks in an Earth System Model ..... 9:10-9:30

W-4: D. Wuebbles U Illinois) Severe weather in a changing climate ..... 9:30-9:50

*Discussion* ..... 9:50-10:05

Coffee and Refreshment ..... 10:05-10:35

### **W-II: The Arctic (Chairs: Qiang Fu and Keeley Costigan)**

W-5: M. Flanner (U Michigan) Arctic climate: Unique vulnerability and complex response to aerosols..... 10:35-10:55

W-6: R. Stone (NOAA) Characterization and direct radiative impact of Arctic aerosols: Observed and modeled..... 10:55-11:15

W-7: M. Zelinka (LLNL) Climate feedbacks and poleward energy flux changes in a warming climate ..... 11:15-11:35

W-8: G. De Boer (U Colorado) The present-day Arctic atmosphere in CCSM4 ..... 11:35-11:55

W-9: R. Peltier (U Toronto) Rapid climate change in the Arctic: the case of Younger-Dryas cold reversal ..... 11:55-12:15

*Discussion*..... 12:15-12:30

## Wednesday Afternoon, November 2

### **W-III: Arctic and Global Climate Variability (Chairs: Igor Polyakov and Sebastian Mernild)**

W-10: G. North (Texas A&M) Looking for climate signals in ice core data.....	2:00-2:20
W-11: T. Kobashi (National Inst Polar Research, Tokyo) High variability of Greenland temperature over the past 4000 years	2:20-2:40
W-12: M. Palus (Inst Comp Sci, Prague) Phase coherence between solar/geomagnetic activity and climate variability .....	2:40-3:00
W-13: N. Scafetta (Duke U) The climate oscillations: Analysis, implication and their astronomical origin .....	3:00-3:20
<i>Discussion</i> .....	3:20-3:35
Coffee and Refreshment .....	3:35-4:05

### **W-IV: Greenhouse Gases, Aerosols, and Energy Balance (Steve Wofsy and James Coakley)**

W-14: M. Dubey (LANL) Multiscale greenhouse gas measurements of fossil energy emissions and climate feedbacks .....	4:05-4:25
W-15: C. Loehle (Nat Council for Air Improvement) Climate change attribution using empirical decomposition .....	4:25-4:45
W-16: R. Davies (U Auckland) The greenhouse effect of clouds: Observation and theory .....	4:45-5:05
W-17: V. Grewe (Inst Atmos Physics, Oberpfaffenhofen) Attributing climate change to NO <sub>x</sub> emissions.....	5:05-5:25
<i>Discussion</i> .....	5:25-5:40
<b>Poster Session P-II</b> .....	5:40-7:40

	<b>Poster Session P-II</b>	<b>Wednesday November 2, 2011</b>
<b>Chairs :</b>		<b>Mark Flanner, Hans Moosmuller, and Dave Higdon</b>
PW-1	Chris Borel-Donohue, Air Force Institute of Technology	Novel Temperature/Emissivity Separation Algorithms for Hyperspectral Imaging Data
PW-2	R. Stone, J. Augustine, E. Dutton, NOAA, Earth System Res. Lab.	Radiative Forcing Efficiency of the Fourmile Canyon Fire Smoke: A Near-Perfect Ad Hoc Experiment
PW-3	Fred Singer, SEPP	Are observed and modeled patterns of temperature trends 'Consistent'? Comparing the 'Fingerprints'
PW-4	Brian A Tinsley, University of Texas at Dallas	Charge Modulation of Aerosol Scavenging (CMAS): Causing Changes in Cyclone Vorticity and European Winter Circulation?
PW-5	A. V. Shapiro, et al, World Rad. Center, Davos, Switzerland	The stratospheric ozone response to a discrepancy of the SSI data
PW-6	M. Palus, et al, Inst. of Computer Science, Prague, Czech Republic	Discerning connectivity from dynamics in climate networks
PW-7	Mark Boslough, SNL	Comparison of Climate Forecasts: Expert Opinions vs. Prediction Markets
PW-8	C. Gangodagamage, et al LANL	Clustering and Intermittency of Daily Air Temperature Fluctuations in the North-Central Temperate Region of the U.S.
PW-9	Michael LuValle, OFS Laboratories	Suggested attribution of Irene's flooding in New Jersey (2011) via statistical postdiction derived from chaos theory
PW-10	A. WINGUTH, ET AL., University of Texas, Arlington	Climate Response at the Paleocene-Eocene Thermal Maximum to Greenhouse Gas Forcing – An Analog for Future Climate Change
PW-11	David Mascarenas, et al LANL	The development of Autonomous Mobile Sensor Nodes for CO <sub>2</sub> Source/Sink Characterization
PW-12	Richard Field, Paul Constantine, and Mark Boslough, SNL	Statistical Surrogate Models for Estimating Probability of High-Consequence Climate Change
PW-13	Steve Schwartz, BNL	Earth's transient and equilibrium climate sensitivities
PW-14	Olga Kalashnikova, JPL	AEROSO VARIABILITY IN ASIAN DUST SOURCES OVER THE PAST DECADE



## Thursday Morning, November

Registration and continental breakfast..... 7:30-8:30

### **Th-I: Theory, Experiment, and Observations (Chairs: Brian Tinsley and Nick Hengartner)**

Th-1: J. Curtius (Frankfurt U) Atmospheric aerosol nucleation in the CLOUD experiment at CERN ..... 8:30-8:50

Th-2: E. Dunne (U Leeds) The influence of ion-induced nucleation on atmospheric aerosols in CERN CLOUD experiment... 8:50-9:10

Th-3: W. Hsieh (UBC) Machine learning methods in climate and weather research ..... 9:10-9:30

Th-4: C. Essex (U Western Ontario) Regime algebra and climate theory..... 9:30-9:50

*Discussion*..... 9:50-10:05

Coffee and Refreshment ..... 10:05-10:35

### **Th-II: Atlantic Ocean and Climate (Chairs: Anastasios Tsonis and Nicola Scaffeta)**

Th-5: M. Hecht (LANL) A perspective on some strength and weaknesses of ocean climate models.....10:35-10:55

Th-6: L. Frankcombe (Utrecht U) Atlantic multidecadal variability - a stochastic dynamical systems point of view .....10:55-11:15

Th-7: S. Mahajan (ORNL) Impact of the AMOC on Arctic Sea-ice variability .....11:15-11:35

Th-8: P. Chylek (LANL) Ice core evidence for a high spatial and temporal variability of the AMO .....11:35-11:55

Th-9: M. Vianna (Oceanica, Brazil) On the 20 year sea level fluctuation mode in Atlantic Ocean and the AMO ..... 11:55-12:15

*Discussion*..... 12:15-12:30

## Thursday Afternoon, November 3

### **Th-III: Climate Change and Vegetation (Chairs: Michael Cai and Thom Rahn)**

Th-10: N. McDowell (LANL) Climate, carbon, and vegetation mortality.....	2:00-2:20
Th-11: D. Gutzler (UNM) Observed and projected hydroclimatic variability and change in the southwestern United States ...	2:20-2:40
Th-12: C. Allen (USGS) Tree mortality and forest die-off response to climate change stresses at regional to global scales .....	2:40-3:00
Th-13: J. Chambers (LBL) Carbon balance of an old-growth Central Amazon forest .....	3:00-3:20
<i>Discussion</i> .....	3:20-3:35
Coffee and Refreshment .....	3:35-4:05

### **Th-IV: Climate Change and Economics (Chairs: Richard Lindzen and John Augustine)**

Th-14: T. Garrett (U Utah) Thermodynamic constrains on long-term anthropogenic emission scenarios .....	4:05-4:25
Th-15: C. Monckton Is CO <sub>2</sub> mitigation cost-effective?.....	4:25-4:45
Th-16: D. Pasqualini (LANL) Does the climate change the economy? An investigation on local economic impact .....	4:45-5:05
Th-17: M. Boslough (SNL) Using prediction market to evaluate various global warming hypotheses .....	5:05-5:25
<i>Discussion</i> .....	5:25-5:40

## Friday Morning, November 4

Registration and continental breakfast..... 7:30-8:30

### **F-I: Observations (Chairs: Steve Love and Brad Henderson)**

F-1: A. Davis (NASA JPL) Cloud and aerosol remote sensing: Thinking outside the photon state-space box..... 8:30-8:50

F-2: H. Moosmuller (DRI U Nevada) Aerosol optics, direct radiative forcing, and climate change..... 8:50-9:10

F-3: N-A Morner (Paleogeophysics, Stockholm) Sea level changes in the Indian Ocean: Observational facts..... 9:10-9:30

F-4: O. Kalashnikova (NASA JPL) MISR decadal aerosol observations ..... 9:30-9:50

*Discussion* ..... 9:50-10:05

Coffee and Refreshment ..... 10:05-10:35

### **F-II: Models, Forcing, and Feedbacks (Chairs: Tim Garrett and Chris Essex)**

F-5: D. Lemoine (U Arizona) Formalizing uncertainty about climate feedbacks ..... 10:35-10:55

F-6: P. Knappenberger, Short-term climate model projected trends of global temperature and observations..... 10:55-11:15

F-7: C. Keller (LANL) Solar forcing of climate: A review..... 11:15-11:35

F-8: W. Gray (CSU) Recent multi-century climate changes as a result of variation in the global ocean's deep MOC..... 11:35-11:55

F-9: C. Folland (UK Met Office) Global surface temperature trends from six forcing and internal variability factors ..... 11:55-12:15

*Discussion*..... 12:15-12:30

Conference ends..... 12:30