

Sunday, October 1, 2017

Dinner (6:30–8:00 PM)

NOTE: All meals in the Main Dining Room

Monday, October 2, 2017

Breakfast (7:00–8:00 AM)

NOTE: All sessions (except for memoriam and posters) in Le Grand Salon

Session 1: Jet Dynamics and Diagnostics (8:00–9:40 AM)

Chair: John Gyakum

Time	Presenter	Title
8:00–8:20	Handlos and Martin	The Composite Life Cycle of West Pacific Jet Superposition Events and their Associated Large-Scale Environments
8:20–8:40	Winters et al.	Discerning the Relative Importance of Polar and Tropical Upper-Tropospheric PV Anomalies during North American Polar/Subtropical Jet Superpositions
8:40–9:00	Madsen and Martin	Exploring Wintertime Pacific Jet Variability using a Blend of Statistical Diagnostics
9:00–9:20	Keyser et al.	A North Pacific Jet Phase Diagram Perspective on Extreme Weather Events during 2016–2017: General Characteristics
9:20–9:40	Bosart et al.	A North Pacific Jet Phase Diagram Perspective on Extreme Weather Events during 2016–2017: Illustrative Examples

Break (9:40–10:10 AM)

Session 2: Midlatitude Convection and Severe Weather (10:10–11:50 AM)

Chair: Brian Tang

Time	Presenter	Title
10:10–10:30	Lombardo and Kading	The Behavior and Characteristics of Squall Lines within Coastal Environments
10:30–10:50	Gagne	Learning Representations of Storm Spatial Structures for Improved Severe Hazard Forecasting
10:50–11:10	Tochimoto et al.	Multi-Scale Structure of Meso-Beta-Scale Vortex Associated with a Maritime Extratropical Cyclone
11:10–11:30	Odell et al.	Supercell Tornadogenesis: A Tornado's Infrastructure
11:30–11:50	Bluestein et al.	On the Behavior of Multiple Cyclonic Tornadoes and Mesocyclones in Supercells

Lunch (11:50 AM–1:00 PM)

Session 3: Tropical Convection, African Easterly Waves, and Tropical Cyclogenesis (1:00–2:20 PM)

Chair: Michael Bell

Time	Presenter	Title
1:00–1:20	Raymond	Convection and Potential Vorticity Over Tropical Oceans
1:20–1:40	Tang	Gross Moist Stability Evolution during Tropical Cyclogenesis
1:40–2:00	Aiyyer	The Structure of the African Easterly Wave “Storm Track”
2:00–2:20	Elless and Torn	Assessing High Variability Forecasts of African Easterly Waves in the ECMWF Ensemble Prediction System: A Case Study Perspective

Break (2:20–2:50 PM)

Session 4: Tropical Cyclone and MJO Predictability (2:50 PM–3:50 PM)

Chair: Anantha Aiyyer

Time	Presenter	Title
2:50–3:10	Lee et al.	Probabilistic Prediction in Tropical Cyclones and the Madden-Julian Oscillation Relationship in the S2S dataset

3:10–3:30	Janiga et al.	Predicting Tropical Cyclone Variability Associated with the MJO and Convectively Coupled Equatorial Waves in Global Coupled Atmosphere-Ocean Models
3:30–3:50	Sippel	The Impact of Global Hawk Dropsondes Upon NCEP Hurricane Forecasts

Recreation (3:50–6:30 PM)

Dinner (6:30–7:30 PM)

Memoriam for Don Johnson and Chester Newton (7:30–8:30 PM; St Andrews)
Lance Bosart, Daniel Keyser, and Louis Uccellini

Evening session (8:30–10:00 PM; Le Grand Salon)
Can the U.S. Become the World Leader in Numerical Weather Prediction?
Fred Carr

Tuesday, October 3, 2017

Breakfast (7:00–8:00 AM)

Session 5: Tropical Cyclone Outflow Layer and Hurricane Patricia (2015) (8:00–9:40 AM)
Chair: Anthony Didlake

Time	Presenter	Title
8:00–8:20	Tripoli and Odell	Diagnostic Analysis of Tropical Cyclone Outflow and Vortex Dynamical Structure Using Inertial Frequency
8:20–8:40	Trabing and Bell	Upper-Tropospheric Temperature Impacts in Idealized Hurricanes
8:40–9:00	Duran and Molinari	Static Stability Evolution near the Tropopause in a Rapidly Intensifying Tropical Cyclone
9:00–9:20	Martinez et al.	Potential Vorticity Structure and Evolution of Hurricane Patricia (2015)
9:20–9:40	Fox and Judt	How Predictable was the Extreme Intensity of Hurricane Patricia (2015)?

Break (9:40–10:10 AM)

Session 6: Atmospheric Blocking (10:10 AM–12:10 PM)
Chair: Steve Colucci

Time	Presenter	Title
10:10–10:30	Hoover et al.	Dynamics of Subseasonal-to-Seasonal Scale Prediction of Blocking Anticyclones in Linear Inverse Models
10:30–10:50	Steinfeld and Pfahl	The Role of Latent Heating in Ascending Air Streams for Atmospheric Blocking
10:50–11:10	Lackmann	Persistent Anomalies and Climate Change
11:10–11:30	Lenggenhager et al.	The Role of Blockings for Heavy Precipitation Events in Central Europe
11:30–11:50	Atallah et al.	On the Relationship between Atmospheric Flow Stagnation and Extreme Precipitation
11:50–12:10	Milrad et al.	The Extreme Flood Index (EFI): A Multivariate Diagnostic Metric for the Relationship between Atmospheric Blocking and Extreme Precipitation

Lunch (12:10–1:00 PM)

Session 7: Extreme Weather in Midlatitude Cyclones (1:00–2:20 PM)
Chair: Kelly Lombardo

Time	Presenter	Title
1:00–1:20	Bentley et al.	Extratropical Cyclones Leading to Extreme Weather Events over Central and Eastern North America
1:20–1:40	Catalano	Characteristics of High-Impact Extratropical Cyclones in a High-Resolution Global Climate Model
1:40–2:00	McCray et al.	A Multi-Scale Analysis of Widespread Long-Duration Freezing Rain Events over North America
2:00–2:20	Moore et al.	Linkages between Rossby Wave Breaking and Widespread Extreme Precipitation in the Central U.S.

Break (2:20–2:50 PM)

Session 8: Rossby Wave Initiation and Breaking (2:50–4:30 PM)**Chair: Andrew Winters**

Time	Presenter	Title
2:50–3:10	Röthlisberger et al.	A Climatological Analysis of Rossby Wave Initiation on the Northern Hemisphere Extratropical Jet
3:10–3:30	Breeden and Martin	Investigating the Lifecycle of an LC1-Breaking Wave using Piecewise Tendency Diagnosis
3:30–3:50	Teubler and Riemer	The Impact of Midlatitude Cyclones on Rossby Wave Packets: A Composite Study
3:50–4:10	Bowley et al.	Diagnosing the Role of Dynamic Tropopause Wave Breaking for Synoptic-Scale Buildups in Northern Hemisphere Zonal Available Potential Energy
4:10–4:30	Baumgart et al.	Dynamics of Forecast Errors in a Quantitative PV Framework

Recreation (4:30–6:30 PM)**Dinner (6:30–8:00 PM)****Evening Session (8:00–10:00 PM)**

Chasing a Giant: Reginald Sutcliffe and the Invention of Modern Synoptic-Dynamic Meteorology
Jon Martin

Wednesday, October 4, 2017**Breakfast (7:00–8:00 AM)****Session 9: Stratospheric Dynamics (8:00–9:40 AM)****Chair: Christian Grams**

Time	Presenter	Title
8:00–8:20	Attard and Lang	The Identification and EP Flux Anomalies of Several Types of Synoptic Events
8:20–8:40	Colucci and Ehrmann	Dynamics of the Stratospheric Aleutian Anticyclone
8:40–9:00	Ehrmann and Colucci	Tropospheric Cooling as a Precursor for Stratospheric Polar Vortex Disturbances
9:00–9:20	Furtado et al.	Modulation of Wintertime MJO Teleconnections by the Northern Hemisphere Stratospheric Polar Vortex
9:20–9:40	Lang et al.	Precursors and Predictability of the 2016-2017 Early Season Weak Stratospheric Vortex Event

Break (9:40–10:10 AM)**Session 10: Cyclone Airstreams and Trajectories (10:10 AM–12:10 PM)****Chair: Shawn Milrad**

Time	Presenter	Title
10:10–10:30	Quinting et al.	Southeastern Australian Heat Waves from a Trajectory Viewpoint
10:30–10:50	Demirdjian et al.	Dropsonde Observations of the Ageostrophy of the Pre-Cold-Frontal Low-Level Jet in Atmospheric Rivers, and its Role in Modulating Water Vapor Transport
10:50–11:10	Oertel et al.	Case Studies of Embedded Convection in Warm Conveyor Belts based on Satellite Data during the NAWDEX Field Campaign
11:10–11:30	Boettcher et al.	The Linkage of Water Vapor Transport Features and Extratropical Cyclones with a Focus on Diabatic Rossby Waves
11:30–11:50	Berman and Torn	The Impact of Warm Conveyor Belt Forecast Errors on Variability in the Downstream Waveguide
11:50–12:10	Grams et al.	An Atmospheric Dynamics' Perspective on the Amplification and Propagation of Forecast Error in Numerical Weather Prediction Models: A Case Study

Lunch (12:10–1:00 PM)

Session 11a: Tropical Cyclone–Trough Interactions (1:00–2:20 PM)**Chair: Kristen Corbosiero**

Time	Presenter	Title
1:00–1:20	Di Muzio et al.	Dynamics and Predictability of Medicanes in the ECMWF Ensemble Forecast System
1:20–1:40	González-Alemán et al.	Synoptic Factors Affecting the Structural Evolution and Predictability of Hurricane Alex (2016) in the Midlatitudes
1:40–2:00	Fischer et al.	Characteristics of Tropical Cyclone Rapid Intensification in Environments of Upper-Tropospheric Troughs
2:00–2:20	Komaromi and Doyle	Idealized Simulations of TC/Trough Interaction

Break (2:20–2:50 PM)**Session 11b: Tropical Cyclone–Trough Interactions (2:50–4:30 PM)****Chair: Kristen Corbosiero**

Time	Presenter	Title
2:50–3:10	Peirano et al.	Tropical Cyclone Intensification under the Influence of Upper-Tropospheric Troughs
3:10–3:30	Riboldi et al.	A Feature-Based Perspective in TC-Midlatitude Flow Interaction: A Climatology of Rossby Wave Initiation and Phase Locking
3:30–3:50	Kowaleski and Evans	Relationship between Track and Structural Evolution of Hurricane Sandy near Landfall
3:50–4:10	Raghavendra and Milrad	A New Dynamic-Thermodynamic Metric to Diagnose Precipitation Distribution in Transitioning Tropical Cyclones
4:10–4:30	Euler	Ventilation and Evolution of Storm Structure during Extratropical Transition of Tropical Cyclones

Recreation (4:30–6:30 PM)**Dinner (6:30–8:00 PM)****Evening Session (8:00–10:00 PM)****The History of Tropical Cyclone Aircraft Reconnaissance***David Reade***Thursday, October 5, 2017****Breakfast (7:00–8:00 AM)****Session 12: Effects of Model Physics on Extratropical Cyclones (8:00–9:20 AM)****Chair: Brett Hoover**

Time	Presenter	Title
8:00–8:20	Attinger et al.	A Systematic Lagrangian Investigation of the Microphysical and Radiative Processes that Modify Extratropical Cyclones and Blocks in IFS Simulations
8:20–8:40	Taheri and Martin	The Influence of Microphysics Parameterizations on Forecasts of Downstream Waviness
8:40–9:00	Giannaros et al.	On the Impacts of Dust on Mediterranean Cyclones: The Medcane Case of December 2005
9:00–9:20	Colle et al.	Environmental Conditions and Physical Processes for Snowbands within Northeast U.S. Winter Storms
9:20–9:40	Vaughan and Fovell	The Influence of Boundary Layer Mixing on Moisture Transport and Precipitation Patterns during the 26–28 January 2015 “Twitter” Snowstorm

Break (9:40–10:10 AM)**Session 13: Tropical Cyclone Structure, Intensity, and Intensity Change (10:10 AM–12:10 PM)****Chair: Michael Riemer**

Time	Presenter	Title
10:10–10:30	Chavas et al.	The Physical Relationship between the Central Pressure Deficit and Maximum Wind Speed in a Tropical Cyclone

10:30–10:50	Didlake et al.	Analyzing the Transition from Rainbands to a Secondary Eyewall using Airborne Radar Observations of Hurricane Earl (2010)
10:50–11:10	Alford and Biggerstaff	Mesoscale Processes Observed in the Inner Cores of Hurricanes Hermine and Matthew
11:10–11:30	Bell and Foerster	Radar-Derived Thermodynamic Structure of Hurricane Rita (2005) in Vertical Wind Shear
11:30–11:50	Rios-Berrios et al.	Diagnosis of Physical Mechanisms Driving Tropical Cyclone Intensification under Moderate Vertical Wind Shear
11:50–12:10	Alland et al.	The Synergistic Effect of Midlevel Dry Air and Vertical Wind Shear on the Development of the Tropical Cyclone Secondary Circulation

Lunch (12:10–1:00 PM)

Session 14a: Predictability of Midlatitude Cyclones (1:00–2:20 PM)
Chair: Brian Colle

Time	Presenter	Title
1:00–1:20	Burg et al.	Applying Forecast Track Diagnostics in High-Impact Northeast Winter Storms: Climatology and Case Analyses
1:20–1:40	Clark and Cavallo	Predictability of Arctic Surface Cyclones
1:40–2:00	Morgan	Sensitivity Analysis of the 13 to 15 March 2017 East Coast Cyclone Event
2:00–2:20	Oswald and Morgan	Understanding the Sensitivity of Cyclogenesis Using Adjoint Analysis

Break (2:20–2:50 PM)

Session 14b: Predictability of Midlatitude Cyclones (2:50–4:30 PM)
Chair: Brian Colle

Time	Presenter	Title
2:50–3:10	Goldstein	Direct Identification of the Factors Driving Intensification Rates of Midlatitude Cyclones using an Adjoint Model
3:10–3:30	Riedel	The Development of the MPAS-DART Ensemble Data Assimilation System for Polar- to Lower-Latitude Predictability Studies
3:30–3:50	Lillo and Parsons	Growth and Propagation of Synoptic-Scale Forecast Error in NWP Forecast Busts
3:50–4:10	Zhang and Sun	The Ultimate Limit of Mid-Latitude Day-to-Day Weather Predictability
4:10–4:30	Craig et al.	“Waves to Weather”: An Interdisciplinary, Collaborative Research Center for Basic Research in Atmospheric Predictability, Dynamics, and Clouds

Recreation (4:30–6:30 PM)

Dinner (6:30–8:00 PM)

Poster Session in St Andrews 1 & 2 (8:00–10:00 PM)

Presenter	Title
Camargo	Extratropical Transition: A Global Perspective
Corbosiero	Diagnosis of Secondary Eyewall Formation Mechanisms in Hurricane Igor (2010)
Dafis	Explicit Forecasting of Lightning Activity during Medicanes
Ditchek	Understanding the Tropical Cyclone Diurnal Cycle Using Numerical Modeling
Evans	Contrasting the Evolution of Hurricane Sandy (2012) during ET with a Canonical Warm Seclusion
González-Alemán	Factors Affecting the Structural Evolution and Predictability of the Tropical Transition of Hurricane Alex (2016)
Maier-Gerber	Birth of the Biscane
McTaggart-Cowan	The Global Hydrological Cycle in Canadian NWP
Michaelis	Representation of Extratropical Transition of Tropical Cyclones using Global Models
Milrad	The Extratropical Transition of Tropical Cyclones: Cyclone Evolution and Direct Impacts
Papin	Intensity Variations in Potential Vorticity Streamers: Development Pathways, and Environmental Impacts in the North Atlantic Basin
Portmann	The Role of Potential Vorticity Cutoffs for Medium-Range Atmospheric Predictability

Riemer	The Extratropical Transition of Tropical Cyclones: Interaction with the Midlatitude Flow, Downstream Impacts, and Implications in Predictability
Spreitzer	Microphysical Processes in Extratropical Cyclone Vladiana: Their Dynamical Relevance and Comparison to Observations during NAWDEX
Vaughan	The Influence of Boundary Layer Mixing on the 27–28 January 2015 “Twitter” Snowstorm: Sensitivity Experiments
Wunsch	Observed Asymmetric Structures of Tropical Cyclones during Secondary Eyewall Formation

Friday, October 6, 2017

Breakfast (7:00–8:00 AM)

Session 15: Polar Lows and Tropopause Polar Vortices (8:00–9:40 AM)

Chair: Eyad Atallah

Time	Presenter	Title
8:00–8:20	Terpstra and Gorodetskaya	A Dynamical Process Study of an Intense Precipitation Event over the East Antarctic Ice Sheet and Southern Ocean
8:20–8:40	Sergeev et al.	The Influence of Svalbard Orography and Sea Ice on Polar Low Development
8:40–9:00	Szapiro and Cavallo	On the Impacts of Tropopause Polar Cyclones across Scales
9:00–9:20	Lusk and Cavallo	A Climatology of Tropopause Polar Vortices (TPVs) in the ERA-Interim Dataset
9:20–9:40	Biernat et al.	Linkages Between the Equatorward Transport of Tropopause Polar Vortices and the Development of Cold Air Outbreaks

Break (9:40–10:10 AM)

Session 16: Cyclones across Scales, Times, and Planets(!) (10:10 AM–12:10 PM)

Chair: Ron McTaggart-Cowan

Time	Presenter	Title
10:10–10:30	Munoz et al.	A Global Climatology of Upper-Tropospheric Cut-Off Lows and an Application for the South American Sector
10:30–10:50	Roebber et al.	Maritime Cyclone Detection and Tracking: From Manual to Heuristic Automation to Machine Learning
10:50–11:10	Greybush	Extratropical Cyclones in the Martian Atmosphere
11:10–11:30	Yanase and Niino	Idealized Experiments on Tropical, Extratropical, and Hybrid Cyclones over the North Atlantic Ocean in Autumn
11:30–11:50	Sinclair	Extratropical Cyclones in the Future: Idealised Aquaplanet Experiments
11:50–12:10	Michaelis et al.	Changes in Winter North Atlantic Extratropical Cyclones in High-Resolution Regional Pseudo-Global Warming Simulations

Lunch (12:10–1:00 PM)

End of Workshop