14th International Meeting on Statistical Climatology (IMSC)

Centre International de Conférences - Météo-France - Toulouse - France · 24th - 28th June 2019

Conference Agenda

Session Overview

Date: Monday, 24/Jun/2019

9:00am - 10:30am	**CB1: Welcome Coffee + Registration** Location: **Hall**
10:30am - 11:30am	**S01-PL: Session 1 - Climate records: data homogenization, dataset creation, and uncertainty** Location: **Amphitheatre** Chair: **Dr. John KENNEDY** Chair: **Dr. Xiaolan L. WANG** **10:30am - 11:00am** **New estimates of bias in historical sea surface temperature records** <u>Elizabeth KENT</u>, Giulia CARELLA, David BERRY, Simone MORAK-BOZZO, Christopher MERCHANT **11:00am - 11:30am** **An Analysis of Daily Mean Air Temperature Across the Globe for the EUSTACE project** <u>Colin MORICE</u>
11:30am - 12:30pm	**S07-PL: Session 7 - Statistical and machine learning in climate science** Location: **Amphitheatre** Chair: **Dr. Philippe NAVEAU** Chair: **Dr. Michael F. WEHNER** **11:30am - 12:00pm** **Topological Data Analysis and Machine Learning methods for pattern detection in spatiotemporal climate data** Grzegorz Muszynski, <u>Karthik Kashinath</u>, Vitaliy Kurlin, Michael Wehner, Prabhat Mr **12:00pm - 12:30pm** **Modeling large rainfall accumulations over several days in the French Alps using low-dimensional atmospheric predictors based on analogy** <u>Juliette BLANCHET</u>, Jean-Dominique CREUTIN

12:30pm - 2:00pm	**LC1: Lunch** Location: **Hall**		
2:00pm - 3:40pm	**S10-O1: Session 10 - Changes in extremes including temperature, hydrologic, and multivariate compound events** Location: **Amphitheatre** Chair: **Prof. Seung-Ki MIN** Chair: **Dr. Jana SILLMANN** **2:00pm - 2:20pm** **Co-occurrence of temperature and heat stress extremes : role of the relative humidity modulation** Audrey BROUILLET, Sylvie JOUSSAUME **2:20pm - 2:40pm** **Detection of a climate change signal in extreme heat, heat stress and cold in Europe** Ruth LORENZ, Zélie Stalhandske, Erich M. Fischer **2:40pm - 3:00pm** **Compound hot / dry events and regional climate sensitivity** Sonia I. SENEVIRATNE, Mathias HAUSER, Lukas GUDMUNDSSON, Martha VOGEL, Richard WARTENBURGER, Jakob ZSCHEISCHLER **3:00pm - 3:20pm** **Increase in daily temperature variability during early growing season** Xuebin ZHANG **3:20pm - 3:40pm** **Impacts of half a degree additional warming on the global heat stress changes** Sang-Min Lee, Seung-Ki Min	**S01-O1: Session 1 - Climate records: data homogenization, dataset creation, and uncertainty** Location: **Prudhomme** Chair: **Dr. John KENNEDY** Chair: **Dr. Xiaolan L. WANG** **2:00pm - 2:20pm** **Recent Surface Air Temperature Change over Mainland China Based on an Urbanization-Bias Adjusted Dataset** Kangmin WEN **2:20pm - 2:40pm** **Improvements in the uncertainty model in the Goddard Institute for Space Studies Surface Temperature (GISTEMP) analysis** Nathan J L Lenssen, Gavin A Schmidt, James E Hansen, Matthew J Menne, Avraham Persin, Reto Ruedy **2:40pm - 3:00pm** **Progress and Insights Towards a New Instrumental Reconstruction of SST and MAT** Robert Andrew Rohde **3:00pm - 3:20pm** **More homogeneous early 20th-century sea surface warming after correcting for historical artifacts** Duo CHAN, Elizabeth C. KENT, David I. BERRY, Peter HUYBERS **3:20pm - 3:40pm** **A 140-year high-resolution meteorological reanalysis over France through offline data assimilation in an ensemble of downscaled reconstructions from 20CR** Alexandre Devers, Jean-Philippe Vidal, Claire Lauvernet, Olivier Vannier	**S07-O1: Session 7 - Statistical and machine learning in climate science** Location: **Megreditchian** Chair: **Dr. Philippe NAVEAU** Chair: **Dr. Michael F. WEHNER** **2:00pm - 2:20pm** **Simulation of Extreme Heatwaves with Empirical Importance Sampling** Pascal YIOU, Aglaé JEZEQUEL **2:20pm - 2:40pm** **Applying machine learning to improve simulations of dynamical systems using empirical error correction** Peter WATSON **2:40pm - 3:00pm** **Atmospheric Features via Topological Data Analysis** Lynne SEYMOUR, Richard Ross, Nicole Lazar, Thomas Mote **3:00pm - 3:20pm** **Statistical-dynamical seasonal prediction of summer precipitation over China based on machine learning** Jialin WANG, Jing YANG, Qing BAO **3:20pm - 3:40pm** **Deep Learning recognizes Weather and Climate Patterns** Karthik KASHINATH, Mayur MUDIGONDA, Ben Toms, Michael Wehner, Mr Prabhat
3:40pm - 4:20pm	**CB2: Coffee Break** Location: **Hall**		
4:20pm - 6:00pm	**S10-O2: Session 10 - Changes in extremes including temperature, hydrologic, and multivariate compound events** Location: **Amphitheatre** Chair: **Prof. Seung-Ki MIN** Chair: **Dr. Jana SILLMANN** **4:20pm - 4:40pm**	**S01-O2: Session 1 - Climate records: data homogenization, dataset creation, and uncertainty** Location: **Prudhomme** Chair: **Dr. John KENNEDY** Chair: **Dr. Xiaolan L. WANG** **4:20pm - 4:40pm** **Uncertainties in the estimation of precipitation**	**S07-O2 / S03-O: Session 7 / Session 3 - Joint session on big data** Location: **Megreditchian** Chair: **Dr. Philippe NAVEAU** Chair: **Dr. Erich M. FISCHER** **4:20pm - 4:40pm** **Penalized basis models for very large spatial**

Detectable increase in extreme precipitation with global warming over global land monsoon region
Wenxia ZHANG, Tianjun ZHOU

4:40pm - 5:00pm
Future evolution of extreme precipitation in Mediterranean basins
Yves TRAMBLAY, Samuel SOMOT

5:00pm - 5:20pm
The connection between protracted drought and extreme precipitation
Ailie GALLANT, Sophie LEWIS, Mustapha ADAMU, Shayne MCGREGOR

5:20pm - 5:40pm
Do more extreme precipitation events intensify more rapidly with warming than less extremes events?
Chao LI, Francis Zwiers, Xuebin Zhang, Guilong Li

5:40pm - 6:00pm
Changes in extreme rainfall seasonality in Australia
Raktima DEY, Lisa V Alexander, Margot Bador

extremes in quasi-global observational datasets
Margot BADOR, Lisa Alexander, Steefan Contractor, Rémy Roca

4:40pm - 5:00pm
Detected changes in precipitation extremes at their native scales derived from in situ measurements
Mark RISSER, Christopher Paciorek, Michael Wehner, Travis O'Brien, William Collins

5:00pm - 5:20pm
Comparison of tests to detect changes in mean and variance in climatological series
José Antonio GUIJARRO

5:20pm - 5:40pm
A Segmentation Method for the Homogenization of GNSS IWV Time Series with R-Package GNSSseg
Annarosa QUARELLO, Olivier Bock, Emilie Lebarbier

5:40pm - 6:00pm
Uncertainty in Satellite estimate of Global Mean Sea Level changes, trend and acceleration
Benoit MEYSSIGNAC, Michael Ablain, Aurelien Ribes, Lionel Zawadski, Remi Jugier

datasets
William KLEIBER, Mitchell Krock, Stephen Becker

4:40pm - 5:00pm
Topological survival analysis for the comparison of random fields
Hollie JOHNSON

5:00pm - 5:20pm
Bayesian analysis of multifidelity computer models with large output and non-nested experimental designs: Application to the Weather Research and Forecasting (WRF) model
Bledar, Alex Konomi, Georgios Karagiannis

5:20pm - 5:40pm
Stochastic energy balance models: fitting to time series via a maximum likelihood approach
Donald P. Cummins, David B. Stephenson, Peter A. Stott

5:40pm - 6:00pm
Estimating Precipitation Extremes using the Spatial Log-Histospline
Whitney K Huang, Douglas William Nychka, Hao Zhang

6:00pm - 9:00pm	**IB: Icebreaker** Location: Hall

Date: Tuesday, 25/Jun/2019

9:00am **-** **10:00am**	**S03-PL: Session 3 - Statistical issues working with large datasets and model outputs** Location: **Amphitheatre** Chair: **Dr. Erich M. FISCHER** Chair: **Prof. Douglas William NYCHKA** **9:00am - 9:30am** **Building blocks for a statistically advanced daily temperature reconstruction system** Finn LINDGREN **9:30am - 10:00am** **Statistics for Ocean Heat Content Estimation with Argo Profiling Floats** **Mikael KUUSELA**, Donata GIGLIO, Anirban MONDAL, Michael STEIN
10:00am **-** **10:30am**	**S11-PL: Session 11 - Extreme value analysis for climate applications** Location: **Amphitheatre** Chair: **Prof. Richard SMITH** Chair: **Dr. Xuebin ZHANG** **10:00am - 10:30am** **Statistical methods and software for extreme value analysis and quantifying uncertainty in extreme event attribution** **Christopher J PACIOREK**
10:30am **-** **11:00am**	**CB3: Coffee Break** Location: **Hall**
11:00am **-** **12:30pm**	**S10-PL: Session 10 - Changes in extremes including temperature, hydrologic, and multivariate compound events** Location: **Amphitheatre** Chair: **Prof. Seung-Ki MIN** Chair: **Dr. Jana SILLMANN** **11:00am - 11:30am** **An overview of how observations have advanced the WCRP Grand Challenge on Extremes** Lisa ALEXANDER **11:30am - 12:00pm** **Forced response, warming pauses and surge events in temperature and heavy precipitation extremes** Erich M. Fischer **12:00pm - 12:30pm** **The dependence between variables in climate model simulations: multivariate bias correction, multivariate hazards, and estimation of time of departure from recent climate variability** Alex CANNON
12:30pm **-** **2:00pm**	**LC2: Lunch** Location: **Hall**

2:00pm **-** **3:30pm**	**S01-P: Session 1 - Climate records: data homogenization, dataset creation, and uncertainty** Location: **Marquee** **Comparison of Two Homogenized**	**S02-P: Session 2 - Interactions of weather and climate with human and natural systems** Location: **Marquee** **Climate Indices in the Network of**	**S03-P: Session 3 - Statistical issues working with large datasets and model outputs** Location: **Marquee** **Projected change of precipitation**	**S04-P: Session 4 - Space-time statistics for modeling and analyzing climate variability** Location: **Marquee** **The origin of the East Asian**

Datasets of Daily Maximum/Mean /Minimum Temperature in China during 1960-2013

Zhen LI, Lijuan Cao, Yani Zhu, Zhongwei Yan

HOSTACE: Reconstructing the Global Historical SST Field

David BERRY, Elizabeth KENT, Giulia CARELLA, Simone MORAK-BOZZO, Christopher MERCHANT

Long-term trends in extreme temperature and precipitation indices for Israel based on a new daily homogenized database

Yizhak YOSEF, Enric AGUILAR, Pinhas ALPERT

Extension of a Blended Monthly Precipitation Dataset to the Pre-Satellite Era

Xiaolan L. WANG, Achan Lin, Vincent Cheng

Homogenisation of temperature in Sweden: sensitivity and robustness of the Climatol toolbox.

Christophe STURM, Erik ENGSTRÖM, Semjon SCHIMANKE, José GUIJARRO

German climate reference stations – Using parallel measurements to analyze the quality and homogeneity of long time series

Lisa HANNAK, Karsten Friedrich, Florian Imbery, Frank Kaspar

Homogenization of Croatian Monthly Precipitation Data Series (1961-2018) by the ACMANT Method

Dubravka RASOL

Relative statistical homogenization of observational networks with a low signal to noise ratio

Victor VENEMA, Ralf LINDAU

The CLICES project: Climate data rescue from Annual Book, creation of secular database and study of uncertainty

Dhais PEÑA-ANGULO, José Carlos

Experts

Kelly Owen STANLEY, Stefan KRÄHENMANN, Stephanie HÄNSEL, Andreas WALTER

Bayesian Information Criterion based Markov Chain Analysis of Some Pollutants Resulted From Heavy Use of Fireworks Over Kolkata, India

Soumyodipta KARMAKAR

On the interactions between teleconnection patterns and fire

Kamoru Abiodun LAWAL, Mark G NEW, Rosa M ROMAN-CUESTA

over China under 1.5°C and 2°C based on model performance and independence

Lilong ZHAO, zhihong jiang, tong Li, jianjun xu

summer monsoon

Kyong-Hwan SEO, Jun-Hyeok SON

Joint probability distributions from a simple hydrologic model with a climate threshold

Roman OLSON, Axel Timmermann, June-Yi Lee

A preferred circulation regime in the extratropical lower stratosphere associated with regional persistent extreme precipitation events in Central-Eastern China

Liang ZHAO

On the Roles of Anthropogenic and Volcanic Aerosols and Greenhouse Gases in Forcing 20th Century Sahel Precipitation

Rebecca Jean HERMAN, Alessandra Giannini, Yochanan Kushnir, Michela Biasutti

Spatiotemporal Variation of Near-surface Air Temperature Lapse Rate in Mainland China

Yun Qin, Guoyu Ren, Panfeng Zhang, Kangmin Wen

The Impact of Arctic Sea Ice on Interannual Variations of Summer Ural blocking events

Ruonan ZHANG, Renhe ZHANG

Spatial correlations of daily precipitation in China

Fan C H, Yin S Q

Co-exchangeable time-series modelling to infer future climate from multiple climate model runs

Stefan SIEGERT, Daniel Williamson, David B. Stephenson

González Hidalgo, Miquele Brunetti, Santiago Beguería, Miquel Tomas-Bueguera, Marcos Rodrigues, Mónica Aguilar

S07-P: Session 7 - Statistical and machine learning in climate science Location: **Marquee**	**S10-P: Session 10 - Changes in extremes including temperature, hydrologic, and multivariate compound events** Location: **Marquee**	**S11-P: Session 11 - Extreme value analysis for climate applications** Location: **Marquee**

Physics-Informed Generative Learning to Emulate Unresolved Physics in Climate Models

Karthik KASHINATH, Jinlong WU, Adrian ALBERT, Mr Prabhat

Probabilistic Detection of Atmospheric Rivers

Travis A. O'Brien, Mark D. Risser, Ankur Mahesh, Chris J. Paciorek, Christina M. Patricola, John P. O'Brien, Burlen Loring, Abdelrahman Elbashandy, Harinarayan Krishnan, Michael F. Wehner, William D. Collins

2:00pm - 2:20pm

A Statistical Framework for Modeling Tropical Cyclone Genesis and Assessing Differences in Basins and Climates

Arturo Fernandez, Karthik Kashinath, Jon McAuliffe, Michael Wehner, Philip Stark, Christina Patricola, Deborah Nolan, Travis O'Brien

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Differences in climate change impacts among weather patterns: spatial heterogeneous changes of future extreme rainfall

Masamichi OHBA, Soichiro SUGIMOTO

Characterization of spatial and temporal trends of extreme precipitation using functional principal component analysis

Miyabi Ishihara, Christopher Paciorek, Mark Risser, Michelle Yu

Observed Changes in Extreme Temperature over the Global Land Based on a Newly Developed Daily Dataset

Panfeng ZHANG, Guoyu REN, Yan XU, Xiaolan L. WANG, Yun QIN, Xiubao SUN, Yuyu REN

Compound events of drought and extremely hot summers

Ana Cristina RUSSO, Andreia Ribeiro, Célia Gouveia

Half-a-degree difference in global warming matters for reducing and delaying global land exposure to compound hot extremes

Yang CHEN

Non stationary POT model for extreme temperature and precipitation analysis in Burkina Faso.

Béwentaoré SAWADOGO, Liliane BEL, Diakarya BARRO

Daily Rainfall Intermittency Characterisation and Trend Analysis under Climate Change over North-eastern North America

Pradeebane VAITTINADA AYAR, Alain

Characterization of ERA-5 daily precipitation using the Extended Generalized Pareto Distribution

Pauline RIVOIRE, Olivia ROMPPAINEN-MARTIUS, Philippe NAVEAU

Robust extreme value analysis: the bulk matching method

Frank KWASNIOK

Spatio-temporal extreme quantile estimation of snow-related quantities in the French Alps

Erwan LE ROUX, Guillaume EVIN, Nicolas ECKERT, Juliette BLANCHET, Samuel MORIN

Influence of atmospheric blocking on extreme ozone concentrations over Europe

Noelia OTERO FELIPE, Henning W. Rust, Tim Butler

Statistical Modeling of Projected Changes in Extreme Wet Spells over China in the Late 21st Century

Lianhua ZHU, Yun LI, Zhihong JIANG

Does extreme value theory produce reliable estimates of long return period climate extremes?

Francis Zwiers, Mohamed Ali Ben Alaya, Xuebin Zhang

Analysis of precipitation intensity in the Czech Republic - past and present

Lenka CRHOVÁ, Stanislava KLIEGROVÁ

Extremal dependence in spatial natural hazard footprints

Laura Claire DAWKINS, David STEPHENSON

Modeling Compound Wind and

| | | MAILHOT | **Precipitation Extremes using a Large Climate Model Ensemble**
Whitney K Huang, Francis William Zwiers, Adam Hugh Monahana | |
| | | | **Trends in the local spatial extremal dependence of environments associated with severe US thunderstorms**
Jonathan KOH, **Erwan KOCH**, Anthony C. DAVISON | |

| 3:30pm
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4:00pm | **CB4: Coffee Break**
Location: **Hall** | | | |

| 4:00pm
-
5:40pm | **S11-O1: Session 11 - Extreme value analysis for climate applications**
Location: **Amphitheatre**
Chair: **Prof. Richard SMITH**
Chair: **Dr. Xuebin ZHANG**

4:00pm - 4:20pm
A comparison of tail models for extreme value analysis of wind speed using large datasets of seasonal forecasts
Cees de Valk, Henk van den Brink

4:20pm - 4:40pm
Extra-Parametrized Extreme Value Copula: Extension to a Spatial Framework
Julie CARREAU, Gwladys TOULEMONDE

4:40pm - 5:00pm
Quantifying weather and climate risk using large-deviation theory
Frank KWASNIOK

5:00pm - 5:20pm
Probability distribution of extreme climate variables using multivariate extreme value analysis
Mohamed Ali Ben Alaya, **Francis Zwiers**, Xuebin Zhang

5:20pm - 5:40pm
Modelling changes in the extremal dependence of temperature maxima
Kate SAUNDERS | **S04-O1: Session 4 - Space-time statistics for modeling and analyzing climate variability**
Location: **Prudhomme**
Chair: **Prof. Peter F. CRAIGMILE**
Chair: **Prof. Timothy DELSOLE**

4:00pm - 4:20pm
Emulating ESMs' Temperatures: From Global Mean Temperature Trajectories to Grid Point Level Realizations
Lea BEUSCH, Lukas GUDMUNDSSON, Sonia I. SENEVIRATNE

4:20pm - 4:40pm
Comparison of tests of collective statistical significance applied to detection of trends
Radan HUTH, Martin DUBROVSKY

4:40pm - 5:00pm
Multiple hypothesis testing corrections in the analysis of climate data
José Cortés, Miguel Mahecha, Markus Reichstein, Alexander Brenning

5:00pm - 5:20pm
A New Criterion for Selecting Multivariate Models
Timothy DELSOLE, Michael Tippett | **S02-O: Session 2 - Interactions of weather and climate with human and natural systems**
Location: **Megreditchian**
Chair: **Prof. Richard CHANDLER**

4:00pm - 4:20pm
Constructing indices to monitor the impact of weather on human health
Fateh CHEBANA, Pierre Masselot, Céline Camoagna, Eric Lavigne, Taha Ouarda, Pierre Gosselin

4:20pm - 4:40pm
Hydrological modelling that combines palaeoclimate reconstructions, instrumental observations and climate model projections at the Paris agreement warming levels
Benjamin J. HENLEY, Natasha BALLIS, Murray C. PEEL, Rory NATHAN, Guoqi QIAN, Andrew D. KING, Ailie J. E. GALLANT, David J. KAROLY

4:40pm - 5:00pm
Compound events in southern Australia and future projections
Nick EARL, Peter Love, Tom Remenyi, Rebecca Harris

5:00pm - 5:20pm
Bivariate modelling of the joint dependence between droughts and crop yield
Andreia Ribeiro, Ana Russo, Célia Gouveia, Patrícia Páscoa | |

| 8:00pm
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11:00pm | **CD: Conference Dinner**
Location: **Hôtel-Dieu Saint-Jacques** |

Date: Wednesday, 26/Jun/2019

Time	Session
9:00am - 10:00am	**S02-PL: Session 2 - Interactions of weather and climate with human and natural systems** Location: **Amphitheatre** Chair: **Prof. Richard CHANDLER** **9:00am - 9:30am** **Attributing the impact of warming temperatures on human mortality** **Michael Wehner**, Veronica Berrocal, Richard Smith **9:30am - 10:00am** **Taking into account the non-stationarity of historical sources in a spatio-temporal relative risk model to infer climate change impact on avalanche activity: application to 240 years of data in the Vosges Mountains** **Florie GIACONA**, Nicolas ECKERT
10:00am - 10:30am	**S04-PL1: Session 4 - Space-time statistics for modeling and analyzing climate variability** Location: **Amphitheatre** Chair: **Prof. Peter F. CRAIGMILE** Chair: **Prof. Timothy DELSOLE** **10:00am - 10:30am** **Transitions and irreversibility of weather regimes** **M. Carmen ALVAREZ-CASTRO**, Bérengère Dubrulle, Pascal Yiou, Davide Faranda
10:30am - 11:00am	**CB5: Coffee Break** Location: **Hall**
11:00am - 11:30am	**S04-PL2: Session 4 - Space-time statistics for modeling and analyzing climate variability** Location: **Amphitheatre** Chair: **Prof. Peter F. CRAIGMILE** Chair: **Prof. Timothy DELSOLE** **11:00am - 11:30am** **Uncovering the forced climate response using statistical learning and application to hydro-meteorological changes in Central European winter** **Sebastian SIPPEL**, Nicolai Meinshausen, Anna Merrifield, Flavio Lehner, Angeline G. Pendergrass, Erich Fischer, Reto Knutti
11:30am - 12:30pm	**S08-PL: Session 8 - Long-term D&A and emergent constraints on future climate projections** Location: **Amphitheatre** Chair: **Prof. Dorit HAMMERLING** Chair: **Prof. Reto KNUTTI** **11:30am - 12:00pm** **Causes of climate change over the industrial period – understanding the past and predicting the future** **Gabriele HEGERL**, Andrew Schurer, Andrew Friedman, Carley Iles, Sabine Undorf **12:00pm - 12:30pm** **Quantifying uncertainty in climate projections based on emergent constraints** **Philip G. SANSOM**, Daniel B. WILLIAMSON, Mark WILLIAMSON, Femke Nijsse
12:30pm - 2:00pm	**LC3: Lunch** Location: **Hall**

2:00pm - 3:40pm	**S11-O2 / S10-O3: Session 11 / Session 10 - Joint session on extreme events** Location: **Amphitheatre** Chair: **Prof. Richard SMITH**	**S04-O2: Session 4 - Space-time statistics for modeling and analyzing climate variability** Location: **Prudhomme** Chair: **Prof. Peter F. CRAIGMILE**	**S08-O1: Session 8 - Long-term D&A and emergent constraints on future climate projections** Location: **Megreditchian** Chair: **Prof. Dorit HAMMERLING**

Chair: **Dr. Jana SILLMANN**	Chair: **Prof. Timothy DELSOLE**	Chair: **Prof. Reto KNUTTI**

Chair: Dr. Jana SILLMANN

2:00pm - 2:20pm

Trends in the extremes of environments associated with severe US thunderstorms
Erwan Koch, <u>Jonathan Koh</u>, Anthony C. Davison, Chiara Lepore, Michael K. Tippett

2:20pm - 2:40pm

Detection and Attribution for Extreme Storms in the Gulf of Mexico
<u>Richard SMITH</u>, Kenneth Kunkel

2:40pm - 3:00pm

Copula-based clustering of concurrent flood risks via hazard scenarios
<u>Roberta Pappadà</u>, Fabrizio Durante, Gianfausto Salvadori, Carlo De Michele

3:00pm - 3:20pm

Using rates of temperature record-breaking as a dataset comparison and model evaluation tool
<u>Andrew D KING</u>, Margot BADOR, Benjamin J HENLEY, Sophie C LEWIS

3:20pm - 3:40pm

Extreme events in climate and turbulence sampled using rare event algorithms
<u>Freddy BOUCHET</u>, Francesco RAGONE

Chair: Prof. Timothy DELSOLE

2:00pm - 2:20pm

Statistical space-time diagnostics of ENSO diversity and associated tropical Pacific rainfall variability, and evaluation of their reproducibility in APCC MME seasonal prediction
<u>Soo-Jin SOHN</u>, Chi-Yung TAM, Jong-Seong KUG

2:20pm - 2:40pm

Quantifying the Agreement Between Observed and Simulated Extratropical Modes of Interannual Variability
<u>Jiwoo Lee</u>, Kenneth Sperber, Peter Gleckler, Celine Bonfils, Karl Taylor

2:40pm - 3:00pm

Annual cycle of the NAO and other circulation modes over the Euro-Atlantic sector
Lucie POKORNÁ, <u>Radan HUTH</u>, Romana BERANOVÁ

3:00pm - 3:20pm

Southern African summer rainfall variability, and its teleconnections, on interannual to interdecadal timescales in CMIP5 models
Bastien Dieppois, Benjamin Pohl, Julien Crétat, <u>Jonathan Eden</u>, Moussa Sidibe, Mark New, Mathieu Rouault, Damian Lawler

3:20pm - 3:40pm

A statistical assessment of co-occurrences between ENSO's different flavors and global patterns of seasonal climate anomalies
<u>Reik DONNER</u>, Catrin KIRSCH

Chair: Prof. Reto KNUTTI

2:00pm - 2:20pm

Cointegration for improved detection and attribution of climate change trends
<u>David B. STEPHENSON</u>, Alemtsehai A. TURASIE

2:20pm - 2:40pm

A Bayesian detection and attribution analysis of extreme temperature changes
<u>Min-Gyu SEONG</u>, Seung-Ki Min

2:40pm - 3:00pm

Data driven Detection and Attribution
<u>Eniko SZEKELY</u>, Sebastian SIPPEL, Reto KNUTTI, Nicolai MEINSHAUSEN

3:00pm - 3:20pm

Human influences on the joint changes in temperature, rainfall and aridity
<u>Celine Bonfils</u>, Benjamin Santer, Thomas Phillips, John Fyfe, Kate Marvel, Susan Zimmerman

3:20pm - 3:40pm

Confidence Intervals in Optimal Fingerprinting
<u>Timothy DELSOLE</u>, Laurie Trenary, Xiaoqin Yan, Michael Tippett

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3:40pm - 4:20pm	**CB6: Coffee Break** Location: **Hall**

| 4:20pm - 6:00pm | **S10-O4: Session 10 - Changes in extremes including temperature, hydrologic, and multivariate compound events**
Location: **Amphitheatre**
Chair: **Prof. Seung-Ki MIN**
Chair: **Dr. Jana SILLMANN**

4:20pm - 4:40pm

Changes in the Arctic Ocean wave extremes – implications to coastal erosion and inundation
<u>Mercè Casas-Prat</u>, Xiaolan L. Wang

4:40pm - 5:00pm

Thermodynamical and residual trends of singular hot days in Europe | **S04-O3: Session 4 - Space-time statistics for modeling and analyzing climate variability**
Location: **Prudhomme**
Chair: **Prof. Peter F. CRAIGMILE**
Chair: **Prof. Timothy DELSOLE**

4:20pm - 4:40pm

Hurst exponent approach through rescaled range analysis to explore surface air temperature over eastern India and quantification of uncertainty through Shannon entropy
<u>Soumyodipta KARMAKAR</u>

4:40pm - 5:00pm

Self-organizing maps: how they relate to modes | **S08-O2: Session 8 - Long-term D&A and emergent constraints on future climate projections**
Location: **Megreditchian**
Chair: **Prof. Dorit HAMMERLING**
Chair: **Prof. Reto KNUTTI**

4:20pm - 4:40pm

Detection and attribution of ocean warming to provide constraints on the effective climate sensitivity due to greenhouse-gas forcing
<u>Katarzyna {Kasia} TOKARSKA</u>, Andrew Schurer, Piers Forster, Gabriele Hegerl

4:40pm - 5:00pm

Attribution of regional sea level trends to |

Aglaé JÉZÉQUEL, Pascal Yiou, Mathieu Vrac, Soulivanh Thao, Julien Cattiaux

5:00pm - 5:20pm

Importance of zonal versus meridional atmospheric flow for climate extremes in the Southern Hemisphere

Ghyslaine BOSCHAT, Julie ARBLASTER, Irina RUDEVA

5:20pm - 5:40pm

Temperature-Duration-Frequency curves integrating information concerning climate variability and change

Taha OUARDA, Christian CHARRON

5:40pm - 6:00pm

39-years of observed climate variability and change in Paris area based on multi-variable analysis

Justine RINGARD, Marjolaine CHIRIACO, Sophie BASTIN, Florence HABETS

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of circulation variability

Romana Beranova, Jan Stryhal, Radan Huth

5:00pm - 5:20pm

Automated classifications of atmospheric circulation patterns: A global perspective

Jan STRYHAL

5:20pm - 5:40pm

Exploring periodicity of solar activity and rainfall in the south-western Cape, South Africa

Nothabo Elizabeth NDEBELE

5:40pm - 6:00pm

Predicting meridional overturning circulation collapse using nonstationary principal oscillation pattern analysis

Frank KWASNIOK

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atmospheric forcing and oceanic chaos: results from an ocean simulation ensemble, and application to observed trends.

Thierry PENDUFF, William LLOVEL, Benoit MEYSSIGNAC, Sally CLOSE, Jean-Marc MOLINES, Laurent TERRAY, Laurent BESSIERES, Bernard BARNIER

5:00pm - 5:20pm

Detection and attribution of artificial ocean alkalinization and stratospheric sulfur injection

Friederike FRÖB, Sebastian Sonntag, Tatiana Ilyina

5:20pm - 5:40pm

On the emergence of anthropogenic signal in extreme precipitation change over China

Zhihong Jiang, Wei Li

5:40pm - 6:00pm

Observational constraints for European climate projections

Saïd QASMI, Aurélien RIBES, Hervé DOUVILLE

Date: Thursday, 27/Jun/2019

9:00am - 9:30am	**S06-PL: Session 6 - Statistics for climate models, ensemble design, uncertainty quantification, model tuning** Location: **Amphitheatre** Chair: **Dr. Benjamin SANDERSON** **9:00am - 9:30am** **Partitioning uncertainty components of an incomplete ensemble of climate projections using data augmentation** **Guillaume EVIN**, Benoit HINGRAY, Juliette BLANCHET, Nicolas ECKERT, Samuel MORIN, Déborah VERFAILLIE				
9:30am - 10:30am	**S12-PL: Session 12 - From global change to regional impacts, downscaling and bias correction** Location: **Amphitheatre** Chair: **Dr. Alex CANNON** Chair: **Dr. Mathieu VRAC** **9:30am - 10:00am** **Statistical techniques to ensure the distillation of robust climate information through downscaling** **Rasmus E. BENESTAD**, Abdelkader Mezghani, Kajsa M. Parding, Helene B. Erlandsen **10:00am - 10:30am** **Texture-aware statistical downscaling** **Gregoire MARIETHOZ**				
10:30am - 11:00am	**CB7: Coffee Break** Location: **Hall**				
11:00am - 12:40pm	**S09-O1: Session 9 - Attribution and analysis of single weather events** Location: **Amphitheatre** Chair: **Dr. Christopher J PACIOREK** Chair: **Dr. Sarah PERKINS-KIRKPATRICK** **11:00am - 11:20am** **The question of life, the universe, and event attribution** **Dáithí STONE**, David Frame **11:20am - 11:40am** **Embracing the complexity of extreme weather events when quantifying their likelihood of recurrence in a warming world** **Luke James HARRINGTON**, Sophie LEWIS, Sarah E PERKINS-KIRKPATRICK, Andrew David KING, Friederike E L OTTO **11:40am - 12:00pm** **Event Attribution of Climate**	**S05-O1: Session 5 - Weather/climate predictability and forecast evaluation** Location: **Prudhomme** Chair: **Prof. Matilde RUSTICUCCI** Chair: **Prof. David STEPHENSON** Chair: **Dr. Thordis THORARINSDOTTIR** **11:00am - 11:20am** **Evaluation of extreme events with the CRPS Distribution** **Maxime TAILLARDAT**, Anne-Laure FOUGERES, Philippe NAVEAU **11:20am - 11:40am** **Evaluating forecasts when truth is uncertain** **Christopher FERRO** **11:40am - 12:00pm** **The diagonal score** **Zied BEN BOUALLEGUE** **12:00pm - 12:20pm** **Revisiting the Climatology**	**S12-O1: Session 12 - From global change to regional impacts, downscaling and bias correction** Location: **Megreditchian** Chair: **Dr. Alex CANNON** Chair: **Dr. Mathieu VRAC** **11:00am - 11:20am** **Statistical downscaling of EAWM into a Korean Local Basin Climate using a Weather Generator** **Moosup Kim**, Seon Tae Kim, Yeomin Jeong **11:20am - 11:40am** **Non-parametric Bias Correction of Multivariate and High-dimensional Climate Simulations: the R2D2 approach** **Mathieu VRAC** **11:40am - 12:00pm** **Downscaling of fields of precipitation by a spatial weather generator**		

Changes with dynamically driven-Stochastic Weather Generators
Sheng CHEN, Mathieu VRAC, Davide FARANDA

12:00pm - 12:20pm
Defining single extreme weather events in a climate perspective
Julien CATTIAUX, Aurélien RIBES

12:20pm - 12:40pm
Describing the relationship between a weather event and climate change: a new statistical approach
Aurélien RIBES, Soulivanh Thao, Julien Cattiaux

Reference in Seasonal Forecasting of Precipitation
Nathan J L Lenssen, Lisa Goddard, Simon Mason

12:20pm - 12:40pm
Verification scores basing on the Earth Mover's Distance
André DÜSTERHUS, Sabrina WAHL

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accounting for climate non-stationarities: SpaWeaGen-DS
Pradeebane VAITTINADA AYAR, Mathieu VRAC, Juliette BLANCHET

12:00pm - 12:20pm
Model selection for DeFoReSt: a strategy for recalibrating decadal predictions
Alexander Pasternack, Henning W. Rust, Jonas Bhend, Jens Grieger, Mark A. Liniger, Wolfgang A. Müller, Uwe Ulbrich

12:20pm - 12:40pm
New approach for stochastic downscaling and bias correction of daily mean temperatures to a high-resolution grid
Qifen YUAN, Thordis Thorarinsdottir, Stein Beldring, Wai Kwok Wong, Shaochun Huang, Chong-Yu Xu

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12:40pm - 2:00pm	**LC4: Lunch** Location: **Hall**

2:00pm - 3:30pm

S05-P: Session 5 - Weather/climate predictability and forecast evaluation
Location: **Marquee**

CSTools R package: handy post-processing tool for state-of-the-arts methods of seasonal forecasts
Nuria PÉREZ-ZANÓN, Louis-Philippe CARON, M. Carmen ALVAREZ-CASTRO, Lauriane BATTÉ, Susanna CORTI, Marta DOMÍNGUEZ, Silvio GUALDI, Jost von HARDENBERG, Llorenç LLEDÓ, Nicolau MANUBENS, Paola MARSON, Stefano MATERIA, Eroteida SÁNCHEZ, Bert van SCHAEYBROECK, Verónica TORRALBA, Silvia TERZAGO, Deborah VERFAILLIE, Danila VOLPI

S06-P: Session 6 - Statistics for climate models, ensemble design, uncertainty quantification, model tuning
Location: **Marquee**

Hypothesis Testing and Statistical Ensemble Generation for Comparing Climate Model Output and Observations
Amy Joan BRAVERMAN, Snigdhansu Chatterjee, Emily Kang, Megan Heyman

Irreducible Uncertainties in Future Sea Level Rise: The importance of Internal Climate Variability
Mélanie BECKER, Mikhail KARPYTCHEV, Aixue HU, Clara DESER

S08-P: Session 8 - Long-term D&A and emergent constraints on future climate projections
Location: **Marquee**

Temperature and precipitation projection at 1.5 ℃ and 2.0℃ increase in global mean temperature
Ting HU, Ying Sun, Xuebin Zhang

Detection and Attribution of precipitation extremes in Asia based on the new Asian observational data
Siyan DONG, Ying Sun

Changes and Attribution of Water vapor since the 1970s over China
Tianbao ZHAO

S09-P: Session 9 - Attribution and analysis of single weather events
Location: **Marquee**

Diminishing winter blue skies from Beijing with global warming
Pei LIN, Yan Zhongwei

Adapting attribution science to the climate extremes of tomorrow
Luke James HARRINGTON, Friederike E L OTTO

Progress in the International CLIVAR C20C+ Detection and Attribution Project
Dáithí STONE, Nikolaos Christidis, Chris Folland, Sarah Perkins-Kirkpatrick, Judith Perlwitz, Hideo Shiogama,

S12-P: Session 12 - From global change to regional impacts, downscaling and bias correction
Location: **Marquee**

Statistical downscaling of a high resolution climate projection ensemble for Germany and it's river catchments
Stefan KRÄHENMANN, Andreas Walter, Michael Haller

Multivariate stochastic bias correction with optimal transport
Yoann Robin, Mathieu Vrac, Philippe Naveau, Pascal Yiou

Statistical tools for Mediterranean Seasonal Forecast (CMCC MEDSCOPE CSTools)

Multi-model skill assessment of near-term decadal climate change information for decision making in agricultural sector

Balakrishnan Solaraju Murali, Nube González-Reviriego, Louis-Philippe Caron, Albert Soret, Francisco J. Doblas-Reyes

A Bayesian framework for postprocessing multi-ensemble weather forecasts

Clair Barnes, Richard E Chandler, Christopher M Brierley

Influence of ENSO and consistency between models on seasonal forecast skill

Christian VIEL, Jacques RICHON, Frédéric GAYRARD, Jean-Michel SOUBEYROUX

Calibration of Multivariate Ensemble Forecasts

Hibah Bahaykh, Christopher Ferro

Evaluation of rainfall Seasonal Forecast: An operational case study

M. Carmen ALVAREZ-CASTRO, Stefano Materia, Silvio Gualdi

Seasonal forecast of summer warm days in Argentina by using principal component regression and a bias correction method

Soledad Maribel COLLAZO, Matilde Mónica RUSTICUCCI, Mariana Graciela BARRUCAND

An empirical prediction approach for seasonal circumboreal forest fire activity

Jonathan Eden, Folmer Krikken, Igor Drobyshev

Michael Wehner, Piotr Wolski, Shreyas Cholia, Harinarayan Krishnan, Donald Murray, Oliver Angélil, Urs Beyerle, Andrew Ciavarella, Andrea Dittus, Xiao-Wei Quan, Mark Tadross

Attribution of cold and hot extreme events in the UK in 2018

Nikolaos CHRISTIDIS, Peter A STOTT

Concurrent 2018 hot extremes across Northern Hemisphere due to human-induced climate change

Martha Marie VOGEL, Jakob Zscheischler, Richard Wartenburger, Dick Dee, Sonia I. Seneviratne

Attributing human influence on the July 2017 Chinese heatwave: the influence of sea-surface temperatures

Sarah SPARROW, Qin Su, Fangxing Tian, Sihan Li, Yang Chen, Wei Chen, Feifei Luo, Nicolas Freychet, Fraser Lott, Buwen Dong, Simon Tett, David Wallom

Assessing dynamical changes in atmospheric circulation patterns associated to weather extreme events

Davide FARANDA, Mathieu Vrac, Pascal Yiou

Extreme precipitation in the Netherlands: an event attribution case study

Jonathan Eden, Sarah Kew, Omar Bellprat, Iris Manola, Hiba Omrani, Geert Jan van Oldenborgh

Detection and Attribution of the Late Onset of the 2015 Wet Season in Nigeria

Kamoru Abiodun LAWAL, Abayomi Abiodun ABATAN,

M. Carmen ALVAREZ-CASTRO, Paola Marson, Stefano Materia, Andrea Borrelli, Silvio Gualdi

The benefits of increasing resolution for global versus regional climate simulations for European climate extremes

Carley ILES, Robert Vautard, Jane Strachan, Sylvie Joussaume, Bernd Eggen, Chris Hewitt

Evaluation and projection of daily precipitation over China based on statistical-dynamical downscaling

Zhihong JIANG, Lianyi GUO

Observing the atmospheric water at different scale: linking water vapour measurements and cloud profiles with a non-parametric statistical downscaling method

Giulia CARELLA, Véronique MICHOT, Mathieu VRAC, Helene BROGNIEZ, Pascal YIOU, Hélène CHEPFER

Regression quantile mapping for distribution and trend preserving bias correction of climate model outputs

Reik DONNER, Christian PASSOW

			Oliver ANGELIL, Eniola OLANIYAN, Victoria OLUSOJI, Philip OGUNTUNDE, Benjamin LAMPTEY, Babatunde J ABIODUN, Hideo SHIOGAMA, Michael F WEHNER, Daithi A STONE	
Co-variability between Climate Indices and the Spread of Seasonal Climate Simulations over South Africa **Kamoru Abiodun LAWAL**, Daithi A STONE, Babatunde J ABIODUN				
Improving drought forecast skill: a weather pattern approach **Doug RICHARDSON**, Hayley Fowler, Chris Kilsby, Rob Neal, Rutger Dankers			**Anthropogenic contribution to the 2017 earliest summer onset in South Korea** **Seung-Ki Min**, Yeon-Hee Kim, In-Hong Park, Donghyun Lee, Sarah Sparrow, David Wallom, Dáithí Stone	
Towards onset: shades of ENSO skill **Dougal Thomas SQUIRE**, James Risbey, Thomas Moore			**Anthropogenic influences on the persistent summer night-time heat waves over North-East China** Liwen REN, <u>Dongqian WANG</u>, Ning AN, Shuoyi DING, Kai YANG, Rong YU, Nicolas FREYCHET, Simon F. B. TETT, Buwen DONG, Fraser C. LOTT	

3:30pm - 4:00pm	**CB8: Coffee Break** Location: **Hall**				

4:00pm - 5:40pm	**S09-O2: Session 9 - Attribution and analysis of single weather events** Location: **Amphitheatre** Chair: **Dr. Christopher J PACIOREK** Chair: **Dr. Sarah PERKINS-KIRKPATRICK** **4:00pm - 4:20pm** **Importance of framing for extreme event attribution: the role of spatial and temporal scales** <u>Megan C. KIRCHMEIER-YOUNG</u>, Hui Wan, Xuebin Zhang, Sonia I. Seneviratne **4:20pm - 4:40pm** **Extreme Event Attribution: experiences from teaching scientists** <u>Simon F B TETT</u>, Buwen Dong, Fraser C Lott, Sarah Sparrow, Jose Marengo, Sun Ying, Zhongwie Yan **4:40pm - 5:00pm**	**S05-O2: Session 5 - Weather/climate predictability and forecast evaluation** Location: **Prudhomme** Chair: **Prof. Matilde RUSTICUCCI** Chair: **Prof. David STEPHENSON** Chair: **Dr. Thordis THORARINSDOTTIR** **4:00pm - 4:20pm** **Impact of initialisation on the reliability of decadal predictions** <u>Deborah Verfaillie</u>, Francisco J. Doblas-Reyes, Balakrishnan Solaraju Murali, Markus Donat, Simon Wild **4:20pm - 4:40pm** **A framework to determine the limits of achievable skill for interannual to decadal climate predictions** Yiling Liu, <u>Markus G. DONAT</u>, Andrea S. Taschetto, Francisco Doblas-Reyes, Lisa V. Alexander, Matt H. England	**S12-O2: Session 12 - From global change to regional impacts, downscaling and bias correction** Location: **Megreditchian** Chair: **Dr. Alex CANNON** Chair: **Dr. Mathieu VRAC** **4:00pm - 4:20pm** **Spatial Analogs for Agricultural Applications: How Best to Order Climate Indices Calculation and Bias Correction before Identifying Analogs ?** <u>Patrick GRENIER</u>, Annabelle FIRLEJ, Anne BLONDLOT, Travis LOGAN, Marie-Pier RICARD **4:20pm - 4:40pm** **Testing the stationary assumption of statistical downscaling using dynamical downscaling model output as pseudo**		

A new framework for the statistical validation of event attribution ensembles
Andrew Michael CIAVARELLA

5:00pm - 5:20pm

Attribution for record events: a simple extension for a non-stationary climate.
Soulivanh THAO, Philippe NAVEAU

5:20pm - 5:40pm

Evaluating models used for event attribution over Africa
Piotr WOLSKI, Friederike Otto, Romaric Oudulami, Mark New

4:40pm - 5:00pm

The seasonal predictability of rainfall extremes in Australia and associated predictive skill in ACCESS-S
Andrew D KING, Debra HUDSON, Todd P LANE

5:00pm - 5:20pm

On climate predictability: A new perspective from scaling and climate memory
Naiming YUAN

5:20pm - 5:40pm

Subseasonal predictability of heavy precipitation in the southwest tropical Pacific in relation with the Madden-Julian Oscillation
Damien SPECQ, Lauriane BATTE, Michel DEQUE

observation
Cheng-Ta CHEN, Shou-Li LIN, Teng-Ping TSENG, Chao-Tzuen CHENG

4:40pm - 5:00pm

Evaluating a bias correction in non-stationary context
Yoann Robin, Mathieu Vrac, Philippe Naveau, Pascal Yiou

5:00pm - 5:20pm

Adaptation of the ADAMONT statistical downscaling method for seasonal prediction systems.
Paola MARSON, Christian VIEL, Sébastien BERNUS, Viviane Gouget, Lauriane Batte, Jean-Michel Soubeyroux, Pierre Etchevers, Samuel Morin

5:20pm - 5:40pm

Interpolation approaches based on auxiliary data to extend temporally climatic series for water stress retrieval in central Tunisia
Nesrine FARHANI, Julie CARREAU, Gilles BOULET, Zeineb Kassouk, Bernard Mougenot, Michel LE PAGE, Zohra LILI CHABAANE, Rim ZITOUNA

6:30pm - 9:00pm	**GA: Group Activity** Location: **Toulouse City Centre**

Date: Friday, 28/Jun/2019

9:00am - 10:30am	**S09-PL: Session 9 - Attribution and analysis of single weather events** Location: **Amphitheatre** Chair: **Dr. Christopher J PACIOREK** Chair: **Dr. Sarah PERKINS-KIRKPATRICK** **9:00am - 9:30am** **Framing issues in extreme event attribution** Theodore SHEPHERD **9:30am - 10:00am** **Towards reliable extreme weather and climate event attribution** Omar Bellprat, Virginie Guemas, Francisco Doblas-Reyes, Markus G. Donat **10:00am - 10:30am** **Attributing heat waves is hard** Geert Jan VAN OLDENBORGH		
10:30am - 11:00am	**S05-PL: Session 5 - Weather/climate predictability and forecast evaluation** Location: **Amphitheatre** Chair: **Prof. Matilde RUSTICUCCI** Chair: **Prof. David STEPHENSON** Chair: **Dr. Thordis THORARINSDOTTIR** **10:30am - 11:00am** **Forecast evaluation with imperfect observations and imperfect models** Philippe NAVEAU, Julie Bessac		
11:00am - 11:20am	**CB9: Coffee Break** Location: **Hall**		
11:20am - 1:00pm	**S09-O3: Session 9 - Attribution and analysis of single weather events** Location: **Amphitheatre** Chair: **Dr. Christopher J PACIOREK** Chair: **Dr. Sarah PERKINS-KIRKPATRICK** **11:20am - 11:40am** **Disentangling the causes of the year without a Summer** Andrew P. Schurer, Gabriele C. Hegerl, Jürg Luterbacher, Stefan Broennimann, Tim Cowan, Simon Tett, Davide Zanchettin, Claudia Timmreck **11:40am - 12:00pm** **Irrigation versus global warming** Wim THIERY, Auke Visser, Erich M. Fischer, Mathias Hauser, Annette L. Hirsch, Dave Lawrence, Quentin Lejeune, Edouard L. Davin, Sonia I. Seneviratne **12:00pm - 12:20pm** **No sign of climate change in the unprecedented Summer 2018 flow over Europe**	**S05-O3: Session 5 - Weather/climate predictability and forecast evaluation** Location: **Prudhomme** Chair: **Prof. Matilde RUSTICUCCI** Chair: **Prof. David STEPHENSON** Chair: **Dr. Thordis THORARINSDOTTIR** **11:20am - 11:40am** **Improving ENSO forecasts using Bayesian model averaging** Pao-Shin CHU, Hanpei Zhang, Luke He, Dave Unger **11:40am - 12:00pm** **Regime-dependent statistical post-processing of ensembles of weather forecasts** Sam ALLEN, Frank KWASNIOK, Chris FERRO **12:00pm - 12:20pm** **A statistical approach to forecasting non-stationary climate indices** Philip G. SANSOM, David B. Stephenson, Daniel B. Williamson	**S06-O: Session 6 - Statistics for climate models, ensemble design, uncertainty quantification, model tuning** Location: **Megreditchian** Chair: **Dr. Benjamin SANDERSON** **11:20am - 11:40am** **Use of machine learning techniques for model parameters tuning** Laurent DESCAMPS **11:40am - 12:00pm** **60km and 90km resolution GCMs for Large-ensemble Climate Simulations in climateprediction.net** Peter WATSON, William Ingram, Sarah Sparrow, Simon Wilson, Giuseppe Zappa, Marie Drouard, Richard Jones, Daniel Mitchell, Tim Woollings, Myles Allen **12:00pm - 12:20pm** **Can we beat climate model democracy in multi-model ensemble projections?**

Carley ILES, Robert Vautard, Friederike Otto, Geert Jan van Oldenborgh, Peter Stott

12:20pm - 12:40pm

The Influence of Anthropogenic Climate Change on the 2015-2017 Drought in the south-Western Cape, South Africa

Andrew John HALL, Mark George NEW, Piotr WOLSKI

12:40pm - 1:00pm

When climate change is not to blame (but we still suspect it is important)

Friederike OTTO, Sjoukje PHILIP, Luke HARRINGTON, Thomas Lees

12:20pm - 12:40pm

Statistical Postprocessing of Seasonal Weather Forecasts

Claudio Heinrich, Kristoffer H. Hellton, Alex Lenkoski, Thordis L Thorarinsdottir

12:40pm - 1:00pm

Does non-Gaussian Calibration Improve Multi-model Seasonal Forecasts?

Nachiketa ACHARYA, Michael K Tippett, Nicolas Vigaud, Andrew W Robertson, Jing Yuan, Lisa Goddard

Ruth LORENZ, Lukas Brunner, Reto Knutti

12:20pm - 12:40pm

Impact of parametric uncertainty on simulated climate extremes and attribution studies

Ben Timmermans, William Collins, Travis O'Brien, Dáithí Stone, Mark Risser

12:40pm - 1:00pm

Use of Gaussian processes to assess the sensitivity of the ARPEGE-Climat atmospheric model to some of its internal parameters.

Olivier AUDOUIN, Romain ROEHRIG, Fleur COUVREUX, Aurélien RIBES, Daniel WILLIAMSON

| 1:00pm - 2:00pm | **LC5: Lunch** Location: **Hall** |