EMS Annual Meeting 2019

European Conference for Applied Meteorology and Climatology 2019

PROGRAMME

COPENHAGEN, DENMARK | 9–13 SEPTEMBER 2019

The Arctic: the new frontier for weather, ice and climate research, forecasting, and services

DANISK METEOROLOGISK SELSKAB

DMI

DTU

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P188 | Leena Järvi
High-resolution urban air quality modelling using PALM 6.0

P189 | Leena Järvi
Spatial variability of local-scale CO_2 emissions in Helsinki

P190 | Chune Shi
Comprehensive analysis on characteristics and mechanisms of transboundary air pollution in a persistent heavy PM2.5 pollution episode in central east China

END OF POSTER PROGRAMME UP2.2

UP3.1 Climate change detection, assessment of trends, variability and extremes

Convener: Martine Rebetez
Co-conveners: Simona Fratianni; Albert M.G. Klein Tank; Monika Lakatos
Poster pitches: Tue, 15:45, Oticon Hall

P125 | Tianbao Zhao
Quantifying the contributions of anthropogenic and natural forcings to climate changes over global land during 1946-2005

P126 | Uwe Pfeifroth
CM SAF Data & Tools for Climate Services

P127 | Masamichi Ohba
Spatially heterogeneous impact of global warming on heavy wet snowfall

P128 | Ondrej Lhotka
Links between increasing drought severity and atmospheric circulation over Central Europe

P129 | Liliya Bocheva
Climate Analysis of Snow Parametars in Bulgarian Part of Rhodopa Mountains (1961-2018)

P130 | Cornelia Schwierz
Inter-annual variability and trends of the rainy season in the Altiplano region in Peru

P131 | Javier Portero
Trend Analysis of extreme temperature events over the Iberian Peninsula

P132 | Ewa Łupikasza
Trends in liquid, solid and mixed precipitation indices in Poland on the background of current climate change

P133 | Ladislav Markovič
Some aspects of changes in number of warmer-than-normal months in climatic conditions of Slovakia

P134 | Wenping He
Can kurtosis be an early warning signal for abrupt climate change?

P135 | Andrei Nita
Evaluation of climatic trends in Romania linked with atmospheric circulation types constructed with different reanalysis datasets

P136 | Monika Lakatos
Detecting changes in hourly precipitation extremes in Hungary

P137 | Emilio Romero
Wind speed changes in the Iberian Peninsula under different climate change scenarios

P138 | Gianna Kitsara
Future changes in climatic indices over the Aegean area; potential micro-climate changes in Andros after land use modifications

P139 | Marius-Victor Birsan
Changes in monthly wind speed in Romania from observational data (1961-2018)

P140 | Agnieszka Sulikowska
Defining cold extremes: methodological peculiarities and their impact on the research results

P142 | Alba Llabrés-Brustenga
Observed trends and changes in Extreme Climate Indices over the Pyrenees (1959-2015)

P143 | Reshmita Nath
Future projection of extreme Hot and Wet events over Huang He, Yangtze and Mekong river basins under RCP8.5 scenario

P144 | Cristina Andrade
Climate change projections for the Iberian Peninsula bioclimatic classification

P145 | Uwe Pfeifroth
Validation and climate analysis of satellite-based and reanalysis data records of surface solar radiation

P146 | Camille Li
European climate change under 1.5 and 2.0 °C warming in a multi-model large ensemble

END OF POSTER PROGRAMME UP3.1

UP3.5 Climate modelling

Convener: Stefan Sobolowski
Co-conveners: Bodo Ahrens; Barbara Chimani
Poster pitches: Tue, 15:30, room S1

P147 | Ole Bøssing Christensen
From PRUDENCE and ENSEMBLES to Euro-CORDEX. What's the difference?

P148 | Emmihenna Jääskeläinen
The effect of existence of snow at forest floor on boreal forest albedo diurnal variation

P149 | Joong-Bae Ahn
1 Month-Lead Predictability of Asian Summer Monsoon Indices Based on the Zonal Winds using APCC Multi-model Ensemble

P150 | Yaohui Li
Simulation of surface temperature in China with a new generation of land surface model CLM4.5

Future changes in climatic indices over the Aegean area; potential micro-climate changes in Andros after land use modifications

Gianna Kitsara, Tim Van der Schriek, Vasilis E. Psiloglou, and Christos Giannakopoulos
National Observatory of Athens, Institute for Environmental Research and Sustainable Development, Athens, Greece

The islands of the Aegean are characterised by strong relief and low vegetation cover and are listed as a region of high desertification risk where impacts of climate change, such as temperature increase and extreme weather phenomena, are expected to affect significantly agricultural production and local economic activities. In this study, projections derived from state-of-the-art Regional Climate Model (RCM) -within the framework of EURO-CORDEX- are used to examine the potential future climate changes (and micro-climate changes) in the Aegean region (and Andros island, respectively) in order to identify the most vulnerable areas and prioritize future interventions. This work is part of the LIFE TERRACESCAPE project that aims to demonstrate at the Aegean island of Andros the use of drystone terraces as green infrastructures resilient to climate change impacts. The micro-climate improvement in Andros island after land-use modifications, will be investigated using basic meteorological parameters such as air temperature and relative humidity collected from installed meteorological stations. Observational data will provide a solid basis for comparisons with changes projected for the future climate, focusing on extreme events such as heatwaves and floods. Future projections of temperature and precipitation, from the RCA4 regional climate model SMHI with boundary conditions from the global HadGEM- ES model of the Met Office Hadley Centre (MOHC) were used, after detailed evaluation for the present climate representation in the Aegean region. In order to depict changes in climatic indices relevant to agriculture, geographical maps for the Aegean area were constructed based on model simulations at a horizontal resolution of approximately 12km. Changes in climate indices between control (1971-2000) and future [the near future period (2031 - 2060) and the distant future period (2069-2098)] periods are examined under the RCP4.5 medium mitigation scenario and the RCP8.5 high emission scenario. Annual averaged maximum (Tmax) and minimum (Tmin) temperatures show increases in the range of 4-6oC across the Aegean in the near- and distant future, especially under the RCP8.5 climate change scenario. Hot days (Tmax>30oC) are projected to increase considerably in the future (reaching up to 75-80 days/year in the E-N Aegean), while tropical nights (Tmin >20 oC) are to double and triple in the near- to distant future for all Aegean islands. Total annual precipitation decreases significantly in the distant future, by 15-25%, while the maximum length of dry spells (precipitation <1mm) shows large increases across the Aegean under both RCP scenarios.