New Zealand weather and climate news

Courtesy of MetService

MetService

Royal Tour: Prince Harry, Meghan Markle to get all four seasons in NZ visit

MetService says the weather for Prince Harry and Meghan Markle will be typical for New Zealand spring – with wind, rain, sun, and cloud all expected over the four-day visit.

Communications meteorologist Lisa Murray said the couple will be "greeted with some rain" on their arrival in Wellington – and, in typical capital fashion, a decent breeze will be expected throughout the day.

https://en.brinkwire.com/news/royal-tour-prince-harry-meghan-markle-to-get-all-four-seasons-in-nz-visit/

Volcano alert

Volcanic ash impact on air travel could be reduced says new research

Volcanologists have developed a method and camera that could help reduce the dangers, health risks and travel impacts of ash plumes during a volcanic eruption.

https://www.sciencedaily.com/releases/2018/10/181024083329.htm

MetOcean

Evaluation of extreme wave probability on the basis of long-term data analysis by Kirill Bulgakov, Vadim Kuzmin, and Dmitry Shilov https://www.ocean-sci.net/14/1321/2018/

Short Summary: A method of calculation of wind wave height probability based on significant wave height probability is described (Chalikov and Bulgakov, 2017). The method can also be used for estimation of height of extreme waves of any given cumulative probability. The application of the method on the basis of long-term model data is presented. Examples of averaged annual and seasonal fields of extreme wave heights obtained using the method above are given. Areas where extreme waves can appear are shown.

Extreme weather (and other news) – Asia and the Middle East, Africa

Better weather warning system for cities soon

The India Met Department (IMD) is gearing up to strengthen its weather observation network for cities in Kerala to provide early warning about extreme events such as heavy rainfall, thunderstorms and squalls.

https://www.thehindu.com/news/national/kerala/better-weather-warning-system-for-cities-soon/article25305977.ece

Precise rain forecasts are still a challenge, but the Hong Kong Observatory is on the ball

A cold front crossed the coast of Guangdong during the day of October 10. Locally, there were sunny intervals before the arrival of the cold front, but isolated showers set in around noon when the cold front moved closer to the territory.

https://www.scmp.com/comment/letters/article/2169981/precise-rain-forecasts-are-still-challenge-hong-kong-observatory

Ministry of Earth Sciences secretary inaugurates Cyclone Warning Centre

Speaking after inaugurating the Cyclone Warning Centre, he said weather prediction involves probabilities and no organisation can give accurate forecasts every single time.

http://www.newindianexpress.com/cities/thiruvananthapuram/2018/oct/24/ministry-of-earth-sciences-secretary-inaugurates-cyclone-warning-centre-1889181.html

Extreme weather (and other news) – Americas and Europe

HeatWatch: extreme heat in Roma

23 Oct 2018

Mark Ogge, Travis Hughes

The Australia Institute

At temperatures above 35 degrees the human body's ability to cool itself reduces, making it a common benchmark temperature for occupational health and safety experts, academic and government researchers.

The number of days over 35 degrees per year in Roma has nearly doubled from an average of 42 days per year from 1992–1997 to 68.5 days per year over the last five years. The amount of these extreme heat days could more than quadruple to a projected 185 days over 35 by 2090.

Days over 40 degrees are also projected to increase from a current average of four to five days per year to as high as 84 days annually by 2090.

Alarmingly, CSIRO and Bureau of Meteorology (BoM) projections also demonstrate an increase in the frequency of hot nights. Unless emissions are decisively reduced, CSIRO and BoM project about half of summer nights could be over 25 degrees by 2070 in Roma.

The impacts of more extreme heat are already being seen globally, with Europe, Russia, India and Pakistan all experiencing heat waves resulting in thousands of deaths.

Increased hot days would reduce productivity in important Queensland industries such as agriculture, construction and tourism. Roma specifically would see its large employment sectors of livestock and wheat crops greatly damaged.

Fortunately, CSIRO projections show that if emissions are reduced, the rises in extreme temperature days will be far lower. For instance, with a decisive reduction in emissions the rise in 40 degree days could be kept to around one third of the rise that could be expected otherwise.

http://www.tai.org.au/sites/default/files/P597%20HeatWatch%20Roma%20%5BWEB%5D_0.pdf

International news and research

Stilling: The curious case of land wind speed decline

All over the world, the wind is slowing. Bit by bit, low-level land wind speeds have been decreasing since reliable records began in the 1970s. It is called "the stilling".

https://www.abc.net.au/news/2018-10-27/land-wind-speeds-slowing-down-over-land-the-stilling/10392980

Tehran to host 1st Intl. Conference on Numerical Weather and Climate Prediction

The event is co-organized by Iran’s Meteorological Organization (IMO), Ministry of Transport and Urban Development, World Meteorological Organization (WMO) as well as Atmospheric Science & Meteorological Research Center, and Iran’s scientific society of meteorology, IMO’s website reported.

https://www.tehrantimes.com/news/428965/Tehran-to-host-1st-Intl-Conference-on-Numerical-Weather-and

University of Washington scientists traveling south to study extreme storms

Sometimes the University of Washington studies bad weather a long way from home, but the knowledge is often applied back in Washington. A team of UW scientists is traveling to Argentina to study some of the most severe thunder and lightning storms in the world.

https://www.king5.com/article/news/local/university-of-washington-scientists-traveling-south-to-study-extreme-storms/281-608561271

Orsted, universities sign meteorology collaboration deal

Denmark's Orsted A/S yesterday inked a memorandum of understanding to boost collaboration in meteorological sciences with local universities for the benefit of the local wind power industry.

http://www.taipeitimes.com/News/biz/archives/2018/10/27/2003703099

Start-Up: Livestock Wx blends weather forecasting with market analyses

For farmers and ranchers, a roll of the weather dice can turn up droughts or floods, good spring rain or inadequate winter snowpack, or any number of other meteorological variables that dramatically affect livestock management and profitability.

https://oilcitywyo.com/startup/2018/10/25/start-up-livestock-wx-blends-weather-forecasting-with-market-analyses/

Understanding The Meteorology Of A Fly Ball May Help Baseball Teams

As I write this, the World Series opener is only a few hours away. Two storied Major League Baseball (MLB) franchises, the Los Angeles Dodgers and Boston Red Sox, play in the fall classic. Both teams play in outdoor stadiums so there is always a chance that weather will be a factor.

https://www.forbes.com/sites/marshallshepherd/2018/10/23/understanding-the-meteorology-of-a-fly-ball-may-help-baseball-teams/#2cfb74026a5c

Getting the most out of atmospheric data analysis

An international team has used a new approach to analyze an atmospheric data set spanning 18 years for the investigation of new-particle formation. They found that their method -- based on mutual information -- supported the major findings of previous work, whilst being more accurate and easier to carry out. The method is expected to provide a useful tool for analyzing other variables that influence atmospheric processes.

https://www.sciencedaily.com/releases/2018/10/181026102715.htm

Climate change impact in Mediterranean region

As the Mediterranean Basin is experiencing the impact of climate change more than ever, an international network of scientists has worked together to synthesize the effects of climate

change and environmental problems, as well as the incurred risks, in the region, to facilitate decision-making in addressing the issues.

https://www.sciencedaily.com/releases/2018/10/181026102625.htm

Meteorologist expects severe drought and heavy rain events to worsen globally

Meteorologists expect severe drought and long-lasting rainfall events to worsen in the future. Researchers have determined how frequent, intense and long lasting these types of events will be in the future.

https://www.sciencedaily.com/releases/2018/10/181025141009.htm

WMO

WMO addresses Arctic Science Ministerial

The unprecedented changes happening in the Arctic are impacting the fragile Arctic ecosystem and have deep impacts on the people living there. Arctic changes are also influencing the global climate system and sea level.

Read more here

Energy and Mining

As power prices surge, Victorians are embracing solar — and it's causing problems

Andy McCarthy has been installing rooftop solar panels in Victoria for 18 years, but even he is stunned by the massive recent growth in demand.

https://www.abc.net.au/news/2018-10-26/victorias-renewable-energy-boom-could-burn-electricity-market/10405210

Health

Exploring the links between weather and well-being

Born in May 1979, Peng Li, a girl from Xiangxi Tujia and Miao autonomous prefecture, Hunan Province, is now a senior engineer with the Shanghai Meteorological Bureau. With curiosity

towards the sky and climate, she became a student who majored in atmospheric sciences at Nanjing University in 1997, and later achieved her master and doctoral degrees at Peking University.

https://www.shine.cn/news/metro/1810244057/

Heart attacks more frequent in colder weather

Heart attacks happen more frequently in winter, a major Swedish study has confirmed.

Published today in JAMA Cardiology the research found the incidence of heart attacks in a sample of more than one-quarter of a million people increased with lower air temperature, lower atmospheric air pressure, higher wind velocity and shorter sunshine duration.

Read more here

Satellites and radar

Combining cloud radar and radar wind profiler for a value added estimate of vertical air motion and particle terminal velocity within clouds by Martin Radenz, Johannes Bühl, Volker Lehmann, Ulrich Görsdorf, and Ronny Leinweber https://www.atmos-meas-tech.net/11/5925/2018/

Short Summary: Ultra-high-frequency radar wind profilers are widely used for remote sensing of horizontal and vertical wind velocity. They emit electromagnetic radiation at a wavelength of 60 cm and receive signals from both falling particles and the air itself. In this paper, we describe a method to separate both signal components with the help of an additional cloud radar system in order to come up with undisturbed measurements of both vertical air velocity and the fall velocity of particles.

Conferences and professional development

Arts + Climate Innovation - Porirua: 4 November. Can the arts inspire action on climate change? A timely conversation with climate scientists James Renwick and Craig Stevens with facilitator Sarah Meads and local artists.

https://royalsociety.org.nz/events/arts-climate-innovation-porirua/

2018 House of Science Symposium: 12 November, Wellington. It takes a village to raise scientific literacy and this annual event is aimed at the whole community. The day will include a variety of keynote speakers, seminars and workshops.

https://houseofscience.nz/symposium/

Journal and articles online

Meteorological Applications

Accepted Articles

Accepted, unedited articles published online and citable. The final edited and typeset Version of Record will appear in the future.

Maximum wbgt mapping in Central-South brazil - A Numerical study

Daniel Pires Bitencourt

First Published: 17 October 2018

Long Range Forecast of Indian Summer Monsoon Rainfall using Artificial Neural Network Model

Rajashree Acharya, Jayanti Pal, Debanjana Das, Sutapa Chaudhuri

First Published: 16 October 2018

It’s not hot air: Using GOES-16 infrared window bands to diagnose adjacent summertime air masses

Jordan J. Gerth

First Published: 15 October 2018

Spatio-Temporal Precipitation and Temperature Trend Analysis of Seyhan-Ceyhan River Basins, Turkey

Veysel Gumus

First Published: 15 October 2018

Table of Contents Alert
Weather and Forecasting - Volume: 33, Number: 5 (October 2018)

ARTICLES

Impacts of Modifications to a Local Planetary Boundary Layer Scheme on Forecasts of the Great Plains Low-Level Jet Environment

David E. Jahn and William A. Gallus

Impact of UAS Global Hawk Dropsonde Data on Tropical and Extratropical Cyclone Forecasts in 2016

A. C. Kren, L. Cucurull, and H. Wang

Quantifying the Separation of Enhanced ZDR and KDP Regions in Nonsupercell Tornadic Storms

Scott D. Loeffler and Matthew R. Kumjian

The Above-Anvil Cirrus Plume: An Important Severe Weather Indicator in Visible and Infrared Satellite Imagery

Kristopher Bedka, Elisa M. Murillo, Cameron R. Homeyer, Benjamin Scarino, and Haiden Mersiovsky

Classification of Extreme Cold Incursions over South America

Isaque Saes Lanfredi and Ricardo de Camargo

On the Extraordinary Intensification of Hurricane Patricia (2015). Part I: Numerical Experiments

Nannan Qin and Da-Lin Zhang

Object-Based Verification of a Prototype Warn-on-Forecast System

Patrick S. Skinner, Dustan M. Wheatley, Kent H. Knopfmeier, Anthony E. Reinhart, Jessica J. Choate, Thomas A. Jones, Gerald J. Creager, David C. Dowell, Curtis R. Alexander, Therese T. Ladwig, Louis J. Wicker, Pamela L. Heinselman, Patrick Minnis, and Rabindra Palikonda

Environmental Factors and Internal Processes Contributing to the Interrupted Rapid Decay of Hurricane Joaquin (2015)

Eric A. Hendricks, Russell L. Elsberry, Christopher S. Velden, Adam C. Jorgensen, Mary S. Jordan, and Robert L. Creasey

Rapid-Scan Radar Observations of an Oklahoma Tornadic Hailstorm Producing Giant Hail

Arthur Witt, Donald W. Burgess, Anton Seimon, John T. Allen, Jeffrey C. Snyder, and Howard B. Bluestein

CFSv2 Monthly Forecasts of Tornado and Hail Activity

Chiara Lepore, Michael K. Tippett, and John T. Allen

Statistical Regression Scheme for Intensity Prediction of Tropical Cyclones in the Northwestern Pacific

Qinglan Li, Zenglu Li, Yulong Peng, Xiaoxue Wang, Lei Li, Hongping Lan, Shengzhong Feng, Liqun Sun, Guangxin Li, and Xiaolin Wei

2017 Atlantic Hurricane Forecasts from a High-Resolution Version of the GFDL fvGFS Model: Evaluation of Track, Intensity, and Structure

Andrew T. Hazelton, Morris Bender, Matthew Morin, Lucas Harris, and Shian-Jiann Lin

The Relationship between Severe Weather Warnings, Storm Reports, and Storm Cell Frequency in and around Several Large Metropolitan Areas

Jason Naylor and Aaron Sexton

Major Risks, Uncertain Outcomes: Making Ensemble Forecasts Work for Multiple Audiences

Rachel Hogan Carr, Burrell Montz, Kathryn Semmens, Keri Maxfield, Samantha Connolly, Peter Ahnert, Rob Shedd, and Jason Elliott

Impacts of Assimilating Smartphone Pressure Observations on Forecast Skill during Two Case Studies in the Pacific Northwest

Conor McNicholas and Clifford F. Mass

Near-Storm Environments of Outbreak and Isolated Tornadoes

Alexandra K. Anderson-Frey, Yvette P. Richardson, Andrew R. Dean, Richard L. Thompson, and Bryan T. Smith

NowCastMIX: Automatic Integrated Warnings for Severe Convection on Nowcasting Time Scales at the German Weather Service

Paul M. James, Bernhard K. Reichert, and Dirk Heizenreder

Predicting the Inland Penetration of Long-Lake-Axis-Parallel Snowbands

Daniel T. Eipper, George S. Young, Steven J. Greybush, Seth Saslo, Todd D. Sikora, and Richard D. Clark

Multiweek Prediction Skill Assessment of Arctic Sea Ice Variability in the CFSv2

Yanyun Liu, Wanqiu Wang, and Arun Kumar

Development of an Operational Convective Nowcasting Algorithm Using Raindrop Size Sorting Information from Polarimetric Radar Data

Darrel M. Kingfield and Joseph C. Picca

Table of Contents Alert
Journal of Applied Meteorology and Climatology - Volume: 57, Number: 10 (October 2018)

ARTICLES

Using Lomb–Scargle Analysis to Derive Empirical Orthogonal Functions from Gappy Meteorological Data

Christopher Dupuis and Courtney Schumacher

Radar-Observed Bulk Microphysics of Midlatitude Leading-Line Trailing-Stratiform Mesoscale Convective Systems

Shawn L. Handler and Cameron R. Homeyer

Polarization-Corrected Temperatures for 10-, 19-, 37-, and 89-GHz Passive Microwave Frequencies

Daniel J. Cecil and Themis Chronis

A New Model to Downscale Urban and Rural Surface and Air Temperatures Evaluated in Shanghai, China

Dongwei Liu, C. S. B. Grimmond, Jianguo Tan, Xiangyu Ao, Jie Peng, Linli Cui, Bingxin Ma, Yan Hu, and Mingbin Du

Selecting Time Series Length to Moderate the Impact of Nonstationarity in Extreme Rainfall Analyses

Arthur T. DeGaetano and Christopher Castellano

A Climatology of Extreme South American Andean Cold Surges

Kevin C. Prince and Clark Evans

Present Climate Evaluation and Added Value Analysis of Dynamically Downscaled Simulations of CORDEX—East Asia

Delei Li, Baoshu Yin, Jianlong Feng, Alessandro Dosio, Beate Geyer, JiFeng Qi, Hongyuan Shi, and Zhenhua Xu

Prediction of the Onset of Heavy Rain Using SEVIRI Cloud Observations

Maximilien Patou, Jérôme Vidot, Jérôme Riédi, Guillaume Penide, and Timothy J. Garrett

Possible Relationship of Weakened Aleutian Low with Air Quality Improvement in Seoul, South Korea

Hye-Ryun Oh, Chang-Hoi Ho, Doo-Sun R. Park, Jinwon Kim, Chang-Keun Song, and Sun-Kyong Hur

WRF Model Study of the Great Plains Low-Level Jet: Effects of Grid Spacing and Boundary Layer Parameterization

Elizabeth N. Smith, Jeremy A. Gibbs, Evgeni Fedorovich, and Petra M. Klein

On Different Microphysical Pathways to Convective Rainfall

Sonia Lasher-Trapp, Shailendra Kumar, Daniel H. Moser, Alan M. Blyth, Jeffrey R. French, Robert C. Jackson, David C. Leon, and David M. Plummer

Daily Precipitation Fields Modeling across the Great Lakes Region (Canada) by Using the CFSR Reanalysis

Dikra Khedhaouiria, Alain Mailhot, and Anne-Catherine Favre

The Gulf of Mexico and ENSO Influence on Subseasonal and Seasonal CONUS Winter Tornado Variability

Maria J. Molina, John T. Allen, and Vittorio A. Gensini

==========

Thanks to MetService Library for these clips