

## **New Zealand weather and climate news**

### *MetService*

#### **Weather: Cool change and showers in store for Hawke's Bay**

MetService Meteorologist April Clark said Hawke's Bay can expect a warm, but showery Monday, before temperatures cool off later in the week.

#### **Don't pack your gumboots and raincoats away just yet**

MetService meteorologist April Clark said the west coast of the South Island was due to get short but heavy dose of rain tomorrow morning.

#### **Weather: Calm, cool Wednesday before the next weather front hits**

New Zealand Herald

MetService meteorologist April Clark said behind this front, rainfall would be significantly decreased - if not ceased - but so will temperatures nationally

#### **More rain on its way for already flood-hit areas**

MetService Meteorologist Peter Little said the heavy rain would hit Westland from Otira southwards, with 100-150mm of rain to accumulate in the ranges and 60-90mm at the coast.

### *NIWA*

#### **Niwa predicting autumn to be warmer than usual in South**

Otago Daily Times

... temperatures warmed across the equatorial Pacific this month and the El Nino weather pattern was expected to continue between April and June.

### **WMO**

#### **WMO State of Climate report is “yet another strong wake-up call.”**

WMO's latest report on global temperatures, extreme weather and climate change indicators and socio-economic impacts is “yet another strong wake-up call” on the need for more ambitious climate...

CMA is willing to help African countries tackle meteorological disasters

Recently, tropical cyclone Idai has inflicted grave impacts on African countries like Mozambique, Zimbabwe and Malawi. China Meteorological Administration (CMA) keeps tabs on the development status of...

[China's two high-resolution Earth observation satellites put into operation](#)

Posted:

On March 21, China put two high-resolution Earth observation satellites, Gaofen-5 and Gaofen-6, into operation after testing. They will set to assist in a wide range of public services including...

[State of the Climate in 2018 shows accelerating climate change impacts](#)

The physical signs and socio-economic impacts of climate change are accelerating as record greenhouse gas concentrations drive global temperatures towards increasingly dangerous levels, according to...

[First Users Climate Outlook Forum underway in Nuku'alofa - Tonga Meteorology Department](#)

The Minister for MEIDECC Honourable Poasi Tei opened the first Users Climate Outlook Forum for Tonga at the National Reserve Bank's conference room this morning. The meeting aims to link climate...

[WMO and World Bank sign action plan to scale up collaboration](#)

The World Meteorological Organization (WMO), the World Bank and its Global Facility for Disaster Risk Reduction and Recovery (GFDRR) have committed to intensify joint action in order to improve...

**[Extreme weather \(and other news\) – Australia and Pacific](#)**

**[First PhD in climate change awarded at USP](#)**

The first student to be awarded a Doctorate of climate change has just graduated from the University of the South Pacific in a ceremony in Fiji's Faculty of Science, Technology and Environment.

**[Tonga Met holds forum to improve climate information](#)**

Matangi Tonga

“Today and tomorrow is an excellent opportunity for all sectors and users of climate information to exchange views with the MET Office as well as ...

**[The Cook Islands prepares for climate change](#)**

ReliefWeb

Thanks to the collaboration of Met Service; the telecommunication's company Cook Islands Bluesky; New Zealand's National Institute of Water and ...

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

#### **Philippines utilities to benefit from new severe weather alert system**

Weather-sensitive industries such as aviation, energy and utilities are set to benefit from a new severe weather monitoring and alerting network installed in the Philippines.

Weather information services provider Earth Networks has completed the installation of the first nationwide severe weather monitoring system for the Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA).

#### **Expect extremely hot summer: IMD**

The Asian Age

Mumbai: The Indian Meteorological Department (IMD) has confirmed weaker El Nino conditions prevalent in the equatorial Pacific Ocean, which may ...

#### **UPDATE: Storm, lightning kill at least 25 in Bara and Parsa (with video)**

BARA, March 31: According to latest reports, strong storm and lightning have killed at least 25 people leaving 400 injured in Bara and Parsa on Sunday evening.

#### **Type of disaster lost even on met dept**

Himalayan Times

The National Weather Forecasting Centre of India had clearly warned that 'thunderstorm accompanied by squall with estimated speed of 50 to 60 ...

#### **Terai storm exposes poor warning system and zero preparedness**

The Kathmandu Post

The weather forecasting authority failed to keep track of the weather ... said that they are unable to predict windstorms because they lack technology.

#### **'Localised weather forecasting tough given the available technology'**

Himalayan Times

“Forecasting weather on a local scale, focused on particular locations in the country is a tough task given the available technology,” said senior ...

### **No lessons learned**

The Kathmandu Post

In a bid to improve weather forecasts and provide real time data on ... But unlike us, in our neighbouring country, National Weather Forecasting Centre ...

### **Pakistan Met Office's heatwave warning centre to start working on April 1**

The Express Tribune

KARACHI: The heatwave early warning centre at the Met Office will begin working from April 1 and will remain functional till October 21. Pakistan ...

### **Minister calls for effective weather data usage**

Borneo Bulletin Online

... aspect, since weather forecasting is among the significant fields that will benefit from the use of high technology for the fourth Industrial Revolution.

### **TMA signs Sh11billion deal for two weather forecast radars**

The deputy minister for works, transport and communication, Mr Atashasta Nditiye said the two radars will make up a total of five that are managed by the agency.

### **Extreme weather (and other news) – Americas and Europe**

#### **Peru: Floods in Amazon kill 51, blame El Nino**

Skymet Weather

Once again, the Amazon region of Peru has been throttled by severe flooding and the notorious El Niño is to be blamed. The Severity of floods has ...

International news and research

#### **Finnish climate heating up, says meteorological institute**

YLE News

A string of abnormally hot temperatures recorded in Finland in recent years provides evidence for climate change, the Finnish Meteorological Institute ...

### **What Is an Atmospheric River?**

A river is a place where water accumulates and moves in the same direction. On land, rainfall gathers in gullies and gulches, joins with runoff from the surroundings, and forms tributaries and mighty rivers that flow to the sea. Water in the atmosphere behaves similarly, and forms rivers in the sky.

### **Atmospheric rivers: California could experience more intense rains in the future**

That's good for the freshwater supply, but it's a double-edged sword.

### **How Meteorologists Compare To Other Professions That Predict The Future**

Forbes

On the Forbes Facebook page, I saw cliché and misinformed comments like "Good, meteorologists are always wrong anyhow." Such statements are ...

### **NextGen Gets AFRL Contract to Deliver New Weather Analysis Approach**

ExecutiveBiz (blog)

AFRL awarded the contract under the Small Business Innovation Research program. WA3S would help USAF process multidomain weather data for ...

### **Arctic warming contributes to drought**

According to new research, changes similar to those after the ice age 10,000 years ago could be in store today because a warming Arctic weakens the temperature difference between the tropics and the poles. This, in turn, results in less precipitation, weaker cyclones and weaker mid-latitude westerly wind flow -- a recipe for prolonged drought.

### **The President's Proposed Budget Would Fire Hundreds Of Meteorologists And Slash Tornado ...**

Forbes

The president's proposed budget for 2020 makes more than \$75,000,000 in cuts to the National Weather Service that, if passed, could adversely affect ...

### **Play ball! Meteorologists provide weather support at Target Field**

Minnesota Public Radio News (blog)

For many years the Minnesota Twins have been the only MLB team to deploy an on-site meteorologist who provides real-time weather support at ...

### **Alabama meteorologist James Spann is the subject of NPR Podcast 'Invisibilia' episode**

AL.com

So we rely on meteorologists to help us out. That's the focus of "Invisibilia," the NPR podcast devoted to unseeable forces and the science of ...

### **How the UK's seasons are changing and the impact on the countryside**

BBC Countryfile Magazine

Our expert weather guide by meteorologists and presenters John Hammond and Sara Thornton considers if and how the UK's seasons are changing ...

### **Aviation**

### **Air New Zealand considering merging Air Nelson and Mount Cook with jet business**

Stuff.co.nz

The Air Nelson fleet consists of 23 50-seat Bombardier Q300 with an ... Having a jet service the route would result in fewer weather-related delays, ...

### **Rocket Lab's latest launch a success**

Newshub

Rocket Lab is boasting its latest spacecraft has ended up exactly where it was meant to be. The New Zealand-US company launched R3D2 from ...

### **Weather Forecasting Services Market in Aerospace industry is projected to grow at an impressive ...**

openPR (press release)

The research studies Aviation Weather Forecasting Services Market in the trend period of 2012 to 2017 and forecasted period of 2018 to 2023 under ...

Business/Insurance

## **Report highlights need for disaster risk reduction**

Insurance Business New Zealand

WMO's report, State of the Global Climate in 2018, shows nearly 62 million people were affected by natural hazards associated with extreme weather ...

## **Wall Street Embraces Weather Risk in New Era of Storms**

Bloomberg

Wall Street Embraces Weather Risk in New Era of Storms ... Eilts, senior vice president for weather at DTN, a Minnesota-based analytics firm, ... fronts, and we call out the captains of each ship within three hours of a cold front coming.

## **From Insurers to Traders to Retailers, More Industries Depend on Weather Tracking**

Insurance Journal

From IBM and AccuWeather Inc. to outfits like Riskpulse, Jupiter and DTN, companies that track weather have created an intensely competitive new ...

Energy and Mining

## **Natural Gas Prices Are Crashing Everywhere as Market Suffers 'Winter Hangover'**

Bloomberg

... is undergoing a winter hangover” after warm weather curbed demand, said ... Gas is expected to surpass coal as the world's second-largest energy ...

## **Risk of gas shortage from 2024, warns Australian Energy Market Operator**

Daily Telegraph

The AEMO report said there were risks in weather-driven variances to electricity demand and supply and what effect these variances would have on ...

Farming/horticulture/Aquaculture

## **Weather has impact on size of fruit for South Canterbury orchard but not quantity**

Stuff.co.nz

Weather has impact on size of fruit for South Canterbury orchard but not ... will enable massive expansion for Timaru apple business, owners say

## **Health**

A billion people will be newly exposed to diseases like dengue fever as world temperatures rise

As many as a billion people could be newly exposed to disease-carrying mosquitoes by the end of the century because of global warming, says a new study that examines temperature changes on a monthly basis across the world.

## **Hydrology / Flooding**

New Report Calls for Different Approaches to Predict and Understand Urban Flooding

WASHINGTON — Urban flooding is a complex and distinct kind of flooding, compounded by land use and high population density, and it requires a different approach to assess and manage, says Framing the Challenge of Urban Flooding in the United States, a new report from the National Academies of Sciences, Engineering, and Medicine. The report calls for multi-agency and cross-jurisdictional efforts to assess urban flood hazards, advance understanding of social impacts, and effectively communicate urban flood risk.

## **Lightning**

**Lightning kills 23-year-old Brazilian surf champ**

How rare are water strikes in Florida?

Transport/roading/shipping/freight

**It's Time For New Vision- Road Weather Information Systems Industry On The Move**

Honest Version

Recent research and the current scenario as well as future market potential of Road Weather Information Systems Market – Global Industry Trend ...

Innovation and technologies (inc data and new products)

**2nd WXG innovations: Task Force Bat Phone delivers data Airmen need**

DVIDS (press release)

Using off-the-shelf components, new processes and a little inspiration from Batman, a group of innovative Airmen from the 557th Weather Wing's 2nd ...

## **What's the Best Weather App? Here Are 5 Great Options**

TIME

Bad weather is going to happen, whether you're dressed for it or not. From unexpected heat waves and cold snaps to sudden rainfall, having the ...

Climate change / global warming / sea level rise

## **Climate change hit 62m people worldwide, says State of the Global Climate report**

Extreme weather last year hit 62 million people worldwide and forced 2 million people to relocate, according to the [World Meteorological Organisation](#) (WMO).

## **Climate change to have 'significant impact' on Māori businesses**

Leaders in iwi and Māori fisheries are worried about climate change and how badly it may hit them.

## **Rising seas threaten hundreds of campgrounds, habitats**

[A new report](#) assessed the threat to DOC-managed areas from coastal flooding, with the aim of guiding DOC on how to manage assets like tracks, carparks, boardwalks and ecosystems in the face of sea-level rise.

## **Second-hottest March another sign of climate change**

New Zealand just sweltered through its second hottest March on record – prompting scientists to highlight the looming hand of climate change.

## **Odd spot**

## **Massive 'Game of Thrones' ice wall forms in Newfoundland**

The Weather Network

A giant wall of ice that has formed near a small town along Newfoundland's northwest coast has people remarking at its similarity to the Wall featured ...

## **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.

### Regionalisation of Precipitation in Mauritius: A Statistical Approach

Nussaibah Begum Raja, Olgu Aydin

First Published: 30 March 2019

### Modeling long term monthly rainfall using geographical inputs: Assessing heuristic and geo-statistical models

Ozgur Kisi, Sahar Mohsenzadeh Karimi, Jalal Shiri, Ali Keshavarzi

First Published: 26 March 2019

### Dealing with inconsistent weather warnings: effects on warning quality and intended actions

Philippe Weyrich, Anna Scolobig, Anthony Patt

Version of Record online: 28 March 2019

Multiple, public and private, weather providers disseminate warning information such as that shown in the image. However, these warnings are currently very inconsistent in visualization and message content, which has negative effects on message quality and decision-making as people choose not to respond to the information because of the ambiguity. Thus, more enhanced collaboration and co-operation is needed between public and private providers to guarantee that more consistent information is being disseminated in a warning situation.

## **Weather**

### Early View

Online Version of Record before inclusion in an issue

### Thermal comfort and heat stress indices for outdoor occupations over 15 years: a case study from Iran

Gholamabbas Fallah Ghalhari, Somayeh Farhang Dehghan, Fahimeh Shakeri, Marzieh Abbasinia, Mehdi Asghari

Version of Record online: 20 March 2019

Sari is located around 53°E longitude and 36° N latitude. It ascends to about 43 meters above sea level, on the southern coast of the Caspian Sea and it has a Mediterranean climate (average annual temperature: 15°C and relative humidity: 73%).

## **Quarterly Journal of the Royal Meteorological Society**

### Accepted Articles

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

### Tropical cyclogenesis at and near the Equator

Sian C. Steenkamp, Gerard Kilroy, Roger K. Smith

First Published: 22 March 2019

### Estimating model evidence using ensemble-based data assimilation with localization – The model selection problem

Sammy Metref, Alexis Hannart, Juan Ruiz, Marc Bocquet, Alberto Carrassi, Michael Ghil

Version of Record online: 22 March 2019

The present study extends the theory for estimating contextual model evidence (CME) to ensemble data assimilation methods with domain localization. Domain-localized CME (DL-CME) is introduced here and is used as a model selection metric against the root-mean-square error (RMSE). The figure shows the spatial difference between the model with correct and incorrect parameters, shown for humidity  $q$  and with an evidencing window of 6 hr, averaged over a 5-month interval: (a) RMSE and (b) DL-CME.

### Impact of high-resolution ocean–atmosphere coupling on fog formation over the North Sea

Joachim Fallmann, Huw Lewis, Juan Castillo Sanchez, Adrian Lock

Version of Record online: 21 March 2019

We consider a fully coupled regional atmosphere–land–ocean–wave prediction system for the UK at km scale and assess the role of sea-surface temperature on fog evolution. Model coupling reduces bias to sea-surface temperature observations from 2.4 K (uncoupled) to 1.1 K (coupled); the impact of coupling is shown to propagate into the overlying marine boundary layer. Near-

surface atmospheric instability occurs, hampering stratus lowering and destroying the fog-promoting inversion layer, leading to reduced fog fractions in selected regions.

On- and off-line evaluation of the single-layer urban canopy model in London summertime conditions

Aristofanis Tsiringakis, Gert-Jan Steeneveld, Albert A. M. Holtslag, Simone Kotthaus, Sue Grimmond

Version of Record online: 21 March 2019

Urban canopy models are essential tools for forecasting weather in cities. They incorporate the sub-grid scale physical processes of the urban surface, but require many surface parameters which are uncertain and can reduce model performance if inappropriately prescribed. Their effect on model performance is usually evaluated in an off-line approach, without taking into account feedback mechanisms between the land surface and the atmosphere (conceptually depicted in the figure). However, for certain surface parameters, atmospheric feedback effects can outweigh the variations caused by the surface parameter settings. Hence to fully understand model sensitivity atmospheric feedbacks should be considered.

Critical flux Richardson number for Kolmogorov turbulence enabled by TKE transport

Livia S. Freire, Marcelo Chamecki, Elie Bou-Zeid, Nelson L. Dias

Version of Record online: 20 March 2019

In stably stratified flows, the flux Richardson number is a measure of the ratio between buoyancy destruction and shear production of turbulent kinetic energy (TKE). Budget equations suggest that turbulent transport of TKE increases the limit of the critical flux Richardson number for the existence of Kolmogorov turbulence. This can be visualized in the TKE phase space, where data from the Amazon rainforest show that there is Kolmogorov turbulence above  $Ri_{f,c}$  with positive turbulent transport of TKE, as predicted by the theory.

Trapped mountain waves with a critical level just below the surface

Clément Soufflet, François Lott, Florentin Damiens

Version of Record online: 20 March 2019

Trapped mountain waves existing when the incident wind is zero at the surface are analyzed with theory and WRF simulations. Circumventing the difficulty that most linear theories are degenerated in this case, we show that trapped waves can exist and that their dynamics is controlled by the near-surface flow stability (here, the surface Richardson number  $J$ ). The theory applies well to small mountains, but the relation with downstream flow stability continues to hold in more nonlinear cases.

Assessment of GPM high-frequency microwave measurements with radiative transfer simulation under snowfall conditions

Mengtao Yin, Guosheng Liu

Version of Record online: 20 March 2019

The bias characteristics for GPM microwave imager (GMI) high-frequency channels at 166 and 183 GHz under snowfall conditions are presented. The remaining biases are found for GMI high-frequency channels when scene brightness temperatures are low. Further investigations show that the remaining biases at GMI high-frequency channels under snowfall conditions are associated with shallow snow cells and deep convective clouds.

1. A case for shallow snow clouds on 12 June 2015, and (b) a case for deep convective snow clouds on 11 March 2015

A two-fluid single-column model of the dry, shear-free, convective boundary layer

John Thuburn, Georgios A. Efstathiou, Robert J. Beare

Version of Record online: 18 March 2019

A novel single-column model of the dry convective boundary layer is presented in which non-local transports by coherent structures such as thermals are represented by partitioning the fluid into two components, updraught and environment, each with a full set of prognostic dynamical equations. The model captures key features such as counter-gradient potential temperature transport and a boundary-layer-top entrainment flux.

Bulk and structural convergence at convection-resolving scales in real-case simulations of summertime moist convection over land

Davide Panosetti, Linda Schlemmer, Christoph Schär

Version of Record online: 18 March 2019

This study investigates both the bulk convergence of the mean diurnal cycle and spatial distribution of precipitation, clouds and convective transport, and structural convergence of cloud-scale statistics in real-case convection-resolving simulations over flat and mountainous terrain. Bulk convergence is systematically obtained for the spatial distribution of the analyzed variables. For their mean diurnal cycle, bulk convergence is attained only in the presence of a mesoscale orographic forcing. Structural convergence is not yet achieved at the kilometre scale.

Numerical investigation of Rossby waves for nonlinear shallow-water equations on the sphere

Pierre Bénard

Version of Record online: 15 March 2019

The analytical expression and spatial structure of Rossby modes for shallow-water equations on the rotating sphere are not known. In contrast to known Rossby modes of the non-divergent barotropic vorticity equation, the shallow-water modes examined here have a non-vanishing wind divergence field. The picture shows this wind divergence field for three values of the mode magnitude, quantified by the maximum value of the meridional wind component (0.001, 10 and 20 metres per second, from left to right panel).

Development mechanisms for Mediterranean tropical-like cyclones (medicanes)

Mario Marcello Miglietta, Richard Rotunno

Version of Record online: 14 March 2019

A classification of medicanes into different categories is proposed. The first category includes cyclones dominated in their mature stage by air–sea interaction, where the latter enables the vortex to sustain itself: an isolated minimum of  $\theta$  (colour, K) on the 2 PVU surface is diabatically generated by convection (panel b), is not connected with any large-scale feature as in the early stages (panel a). The second category includes cyclones in which both air–sea interaction and baroclinic processes are important, and the vortex remains connected with the large-scale PV structure in which it formed (panel c) even in its mature stage (panel d).

A case-study of cold-air pool evolution in hilly terrain using field measurements from COLPEX

Bradley C. Jemmett-Smith, Andrew N. Ross, Peter F. Sheridan, John K. Hughes, Simon B. Vosper

Version of Record online: 14 March 2019

Even on clear-sky, low-wind nights which are “ideal” for cold-air pooling, various small-scale processes can disrupt cold-pool growth. This observational case-study shows evidence of gravity waves, Kelvin–Helmholtz instability and turbulence induced by a nocturnal low-level jet, all affecting cold-pool development over the course of the night.

Updates of HITRAN spectroscopic database from 2008 to 2016 and implications for near-infrared radiative transfer calculations

Kaah P. Menang

Version of Record online: 13 March 2019

The HITRAN spectroscopic database, which is updated regularly, contains absorption line parameters required for calculations of clear-sky short-wave fluxes and heating rates (see for example image). Line-by-line radiative transfer calculations show that the revision of HITRAN

in the last decade led to relatively small differences in the near-infrared total absorption and solar heating rates. Thus, using the newest HITRAN edition for the near-infrared calculations of these quantities depends on the required accuracy.

A numerical simulation of a strong wind event in January 2013 at King Sejong station, Antarctica

Hataek Kwon, Sang-Jong Park, Solji Lee, Baek-Min Kim, Taejin Choi, Seong-Joong Kim

Version of Record online: 11 March 2019

It is the model domain for different horizontal resolutions and the Fig. [185b](#) is the enlarged part of d03.

Systematic decomposition of the MJO and its Northern Hemispheric extratropical response into Rossby and inertio-gravity components

Christian L. E. Franzke, Damjan Jelic, Sukyoung Lee, Steven B. Feldstein

Version of Record online: 07 March 2019

Our analysis shows that Rossby modes provide a larger contribution to the magnitude of the MJO in terms of geopotential height and winds than inertio-gravity (IG) modes. Moreover, the kinetic energy associated with the Rossby modes of the MJO accounts for about 93% of the total kinetic energy. Our decomposition also shows that the Kelvin wave is the dominant mode in the inertio-gravity wave part, which is flanked by Rossby waves on both sides of the Equator.

Assessing the predictability of Medicanes in ECMWF ensemble forecasts using an object-based approach

Enrico Di Muzio, Michael Riemer, Andreas H. Fink, Michael Maier-Gerber

Version of Record online: 07 March 2019

This satellite image shows Medicane Qendresa (November 2014), the strongest and most destructive of the eight Medicanes whose predictability is analysed in this paper through an object-based approach using ECMWF ensemble forecasts. Findings reveal a non-gradual evolution of ensemble statistics with lead time and a general underprediction of storm intensity and kinematic features at long lead times. The ECMWF ensemble prediction model is found to be capable of reproducing Medicanes, albeit only at short lead times.

Atmospheric sensitivity to marginal-ice-zone drag: Local and global responses

Ian A. Renfrew, Andrew D. Elvidge, John M. Edwards

Version of Record online: 06 March 2019

We investigate the impact of a new parametrization of surface drag over the marginal ice zone on the atmosphere. Drag is imparted by surface friction and form drag from wind blowing against the vertical faces of sea-ice floes. The impact of the new scheme on winds, temperature and surface fluxes is significant and, when compared to in situ observations, generally leads to an improved representation of the atmospheric boundary layer.

Accuracy of current Arctic springtime water vapour estimates, assessed by Raman lidar

Julien Totems, Patrick Chazette, Jean-Christophe Raut

Version of Record online: 05 March 2019

During May 2016, we deployed a Raman lidar in Hammerfest, Norway, obtaining a unique two-week continuous time series of polar daytime water vapour profiles. We compare these observations to: (a) the reanalyses of numerical weather models, showing a wet bias of the models below  $\sim 1$  km altitude, coherent with previous studies with radiosoundings in the Arctic; (b) the satellite retrievals by AIRS/Aqua and IASI/MetOp, showing good correlation despite relatively large dispersion and dry bias above 2 km.

Effects of a multilayer snow scheme on the global teleconnections of the Indian summer monsoon

K. Sujith, Subodh Kumar Saha, Archana Rai, Samir Pokhrel, Hemantkumar S. Chaudhari, Anupam Hazra, Raghu Murtugudde, B. N. Goswami

Version of Record online: 05 March 2019

Global boreal summer (June to September) rainfall in mm/day. Climatological rainfall from (a) GPCP and (b) CFS\_OSS. (c) Bias in CFS\_OSS with respect to GPCP and (d) difference between the CFS\_NSS and CFS\_OSS.

Radiation, surface temperature and evaporation over wet surfaces

Yuting Yang, Michael L. Roderick

Version of Record online: 04 March 2019

We deduce a new maximum evaporation concept on theoretical grounds. We use modern satellite-based radiation observations along with an ocean database to show that the observed oceanic evaporation closely follows the maximum evaporation concept. We use the theory and results to provide a new formula to estimate evaporation that supersedes the long-used Priestley–Taylor equation for evaporation.

The characteristics of African easterly waves coupled to Saharan mineral dust aerosols

Dustin F.P. Grogan, Christopher D. Thorncroft

Version of Record online: 03 March 2019

During summer, African easterly waves can interact with dust aerosols in the Sahara Desert. This study examines the characteristics of African easterly waves that are coupled to Saharan dust. Results show how the waves mobilize and transport dust over Africa. The evolution of the dust-coupled waves has implications on wave development through dust radiative feedbacks, and on long-range dust transport.

20 of 33 articles shown

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Xianhua Wu, Zhe Xu, Hui Liu, Ji Guo, and Lei Zhou

Rhythms of Prediction in South Australian Water Resource Management

Steve Rayner

Using a Multiyear Temporal Climate-Analog Approach to Assess Climate Change Impacts on Park Visitation

Micah J. Hewer and William A. Gough

Historical and Future Changes in Asset Value and GDP in Areas Exposed to Tropical Cyclones in China

Mengqi Ye, Jidong Wu, Cailin Wang, and Xin He

Local TV News Viewer Reactions to Weathercasters Reporting the Local Impacts of Climate Change

Allison Engblom, Kristin Timm, Raphael Mazzone, David Perkins, Teresa Myers, and Edward Maibach

Meteorologists' Interpretations of Storm-Scale Ensemble-Based Forecast Guidance

Katie A. Wilson, Pamela L. Heinselman, Patrick S. Skinner, Jessica J. Choate, and Kim E. Klockow-McClain

Historical Analysis of U.S. Tornado Fatalities (1808–2017): Population, Science, and Technology

Ernest Agee and Lindsey Taylor

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**Welcome to AMS News You Can Use.**

Each week, we send out a sampling of recent news and items of interest in meteorology and related fields, as covered by various media outlets.

April 2, 2019

News

How Meteorologists Compare To Other Professions That Predict The Future

April 2, 2019 - Forbes

The reality is that weather forecasts are quite good when consumed with proper perspective.

Read MORE

Death Toll From Idai Rises Above 800: 3rd Deadliest Southern Hemisphere Cyclone on Record

April 2, 2019 - Weather Underground

The official death for Idai on Monday morning stood at 826, with 501 dead in Mozambique, 259 in Zimbabwe, 56 in Malawi, 7 in South Africa, and 3 in Madagascar.

Read MORE

Research Brief: New Understanding Reveals How Jets and Cyclones Interact

April 2, 2019 - CLEX

These findings can help us understand how the turbulent atmosphere is organized in coherent motions via the jet stream.

[Read MORE](#)

Most of the Arctic's 'Baby Sea Ice' Melts Before It Leaves the Nursery. And That's a Problem.

April 2, 2019 - LiveScience

New research finds that two decades ago, half of the sea ice formed near the Arctic coast of Russia went on a windblown journey through the Arctic Ocean and out via the Fram Strait between Greenland and Svalbard before melting. Today, only about 20 percent of the ice born near Russia makes that journey.

[Read MORE](#)

How AI Might Be Used to Battle Wildfires -- Journal Report

April 1, 2019 - Morningstar

Firefighters are recruiting a powerful new ally in the fight against wildfires: an army of miniature robots.

[Read MORE](#)

Researchers learning true scale of Lake Mead, Powell evaporation rates

April 1, 2019 - Las Vegas Review-Journal

Precious water is vanishing into thin air at the Colorado River's two largest reservoirs, and scientists are only now learning the true scale of the problem.

[Read MORE](#)

Stronger hurricanes taking toll on tropical forests

April 1, 2019 - Palm Beach Post

When Hurricane Maria sacked Puerto Rico, it did more than take thousands of lives, pulverize houses, and dismantle infrastructure. It shredded the island's tropical forests at an unprecedented rate.

[Read MORE](#)

[First weather satellite launched this day in 1960](#)

April 1, 2019 - WRAL.com

The Television InfraRed Observational Satellite (TIROS-1) was designed by RCA to study the feasibility of monitoring weather patterns from space. It provided forecasters their first-ever view of clouds as they formed around the globe.

[Read MORE](#)

[The President's Proposed Budget Would Fire Hundreds Of Meteorologists And Slash Tornado Research](#)

March 31, 2019 - Forbes

The president's proposed budget for 2020 makes more than \$75,000,000 in cuts to the National Weather Service that, if passed, could adversely affect the agency's ability to keep the public safe during severe weather.

[Read MORE](#)

[Why tornado chasers are facing a storm over safety](#)

March 30, 2019 - MSN.com

The official history of tornado forecasting began in Oklahoma City in a rather informal fashion. When a tornado ploughed through Tinker Air Force Base on 20 March 1948, it was the costliest in Oklahoma's history.

[Read MORE](#)

[Could computers provide short-term warnings of the world's worst floods?](#)

March 29, 2019 - Science

Floods have wrought destruction in the United States and Mozambique this month, highlighting the struggle scientists face in predicting where high water will spread. In the United States, above-average rainfall helped swell the Missouri River to record levels, inundating thousands of homes and destroying farms.

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[Extreme Weather Impacted 62 Million People in 2018, UN Report Says](#)

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