

New Zealand weather and climate news

These clips are Courtesy of MetService Library

MetService focus

A turbulent week of weather forecast to end autumn: Heavy falls, thunderstorms and strong gusts

New Zealand Herald

MetService Meteorologist Lisa Murray said this is a change from the high pressure systems that we have seen for the first half of the year. "This week is ...

Many NZ regions on track for warmest, driest autumn since records began

TVNZ

MetService meteorologist Lisa Murray said the warmer, drier weather was due to several high pressure systems over the country in the last three ...

Weather: MetService issues warning for 'significant rain event'

Newshub

Rain clouds are lining up to smash the West Coast, with MetService warning over half-a-metre of rain is expected to fall over the next few days.

Rain and strong winds expected across South - Otago Daily Times

Slips and flooding expected as heavy rain takes aim at West Coast - Stuff.co.nz

Fog disrupts flights at Christchurch Airport again

RNZ

MetService said a very sharp change brought the fog rolling in, reducing visibility to 100 metres. This morning, several flights to Christchurch from ...

Fog in Auckland delays morning ferry commutes

Stuff.co.nz

MetService meteorologist Tamara Vuksa said the city itself wasn't likely to have been affected by fog but there was fog around Whenuapai and ...

North Island to feel brunt of front ramping up on the West Coast

Stuff.co.nz

MetService duty meteorologist Larissa Marintchenko said more than 50 millimetres had already fallen in Milford Sound overnight, as a front works its ...

Wild West Coast: Severe thunderstorms, heavy rain, possible tornadoes forecast

Stuff.co.nz

MetService has also issued a strong wind warning for the Canterbury High Country, with severe wind northwest gales possibly reaching up to 130kmh.

Wild winds expected to ease in Manawatū after gusty night

Stuff.co.nz

Manawatū was buffeted by gusts of up to 83 kilometres per hour overnight as wild weather hit. MetService issued a strong wind watch for Manawatū, ...

Thunderstorms, heavy rain, wind warnings across Aotearoa

Māori Television

The MetService says rain warnings are in place for the South Island and the Bay of Plenty. "For western areas of the South Island this is a significant ...

Wet weather to be expected after unusually dry May

New Zealand Herald

Wet weather set in over the last few days in Tauranga and MetService issued a severe weather warning for heavy rain this morning in the Bay of ...

When does winter officially start in New Zealand?

Stuff.co.nz

June 1 marks the official start of winter, according to meteorologists. But it's not the only start date for the cold season. "There are actually four different ...

Volcano alert

Some Bali flights cancelled as Mount Agung volcano erupts

Several flights to and from Bali's international airport have been cancelled after volcanic Mount Agung erupted on Friday night, sending stones and incandescent lava up to three kilometres in all directions.

MetOcean

15 priorities for wind-waves research: An Australian perspective. Bull. Amer. Meteor. Soc., 0, <https://doi.org/10.1175/BAMS-D-18-0262.1>

This paper describes the process and outcomes of a collaborative process across different Australian stakeholder groups to identify the highest priorities in wind-wave research.

The Australian marine research, industry and stakeholder community has recently undertaken an extensive collaborative process to identify the highest national priorities for wind-waves research. This was undertaken under the auspices of the Forum for Operational Oceanography Surface Wave's Working Group. The main steps in the process were firstly, soliciting possible research questions from the community via an online survey; secondly, reviewing the questions at a face-to-face workshop; and thirdly, online ranking of the research questions by individuals. This process resulted in 15 identified priorities, covering research activities and the development of infrastructure. The top 5 priorities are 1) Enhanced and updated nearshore and coastal bathymetry; 2) Improved understanding of extreme sea-states; 3) Maintain and enhance in situ buoy network; 4) Improved data access and sharing; and 5) Ensemble and probabilistic wave modelling and forecasting. In this paper, each of the 15 priorities is discussed in detail, providing insight into why each priority is important, and the current state-of-the-art, both nationally and internationally, where relevant. While this process has been driven by Australian needs, it is likely that the results will be relevant to other marine-focussed nations.

NIWA

Warm, dry weather sees parts of the country on track for record or near-record autumn

Winter is coming, but it sure didn't feel like it for many this weekend.

With just five days before the official end of autumn, many parts of the country are on track for a record or near-record season.

WMO

Mozambique cyclones are “wake-up call,” says WMO

Fact-finding mission makes recommendations for future resilience / The devastation caused by cyclones Idai and Kenneth which hit Mozambique within the space of a few weeks is a wake-up call about...

Artificial Intelligence for good

Artificial intelligence is creating opportunities for contributing to much-needed efficiency gains in the handling of data that underpins Earth system science and weather and climate predictions, WMO...

Strong El Niño this year appears unlikely

A strong El Niño event during 2019 appears unlikely, according to a new World Meteorological Organization Update, which is based on forecast models and expert opinion from around the globe. Sea...

Extreme weather (and other news) – Australia and Pacific

New website for Met Service

Cook Islands News

Cook Islanders can now access their national weather, climate and ocean information at the touch of a button with the launch of the new Cook Islands ...

Fiji crash report recommends mountain flying training

An investigation into a plane crash in Fiji last year has recommended mountain flying training be introduced for all pilots.

Bureau of Meteorology hunts new CISO

iTnews

The Bureau of Meteorology is hunting for a new chief information security officer to lead its cyber security centre after its last chief was snapped-up by ...

The Bureau of Meteorology's delivery of extreme weather services

22 May 2019 Australian National Audit Office Australian National Audit Office The audit's objective was to determine if the Bureau of Meteorology's processes support the delivery of effective extreme weather services

https://apo.org.au/node/237696?utm_source=APO-feed&utm_medium=RSS&utm_campaign=rss-all

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

Watch out Thailand, here comes Vietnam

The Thaiger

“The population is ageing, while climate change and rapid development is straining the environment and food production as the country rapidly ...

Extreme weather (and other news) – Americas and Europe

Big waves flood parts of Toronto Island, water still rising

The Weather Network

Significant flooding is now occurring on Toronto Island as water levels across the region continue to creep toward record territory. Thursday's powerful ...

Scientists Warn Violent Thunderstorms Threaten Greece this Summer

Greek Reporter

The warning by AccuWeather, a media company that provides commercial weather forecasting services worldwide, says that violent thunderstorms ...

Devastating Tornadoes Rip Through Ohio and Indiana as Severe Storm Saga Rages On

CBN News

Meteorologists are reporting six active tornadoes overnight. "We come out and see this canopy completely gone on our church van. Scariest moment ...

New Zealand research

Report on state of regional environment released

Horizons Regional Council has released its 2019 State of Environment (SOE) report which provides a snapshot of the state and trends of our region's natural resources.

International news and research

NOAA Predicts Above-Normal Cyclone Activity in Central Pacific

The Maritime Executive

“This outlook reflects the forecast for El Nino to likely continue through the hurricane season. Also, ocean temperatures in the main hurricane formation ...

Seeing inside superfog

Posted: 23 May 2019 07:49 AM PDT

High humidity and plant moisture combine with cold air and smoke from burning vegetation to form particularly dense fog, but researchers can't predict when.

Melting small glaciers could add 10 inches to sea levels

Posted: 23 May 2019 07:49 AM PDT

A new review of glacier research data paints a picture of a future planet with a lot less ice and a lot more water.

America's upgraded weather forecast model still lags behind Europe

Axios

... make up much ground against two of NOAA's forecasting rivals: the European Centre for Medium Range Weather Forecasts and the U.K. Met Office.

New lidar instruments peer skyward for clues on weather and climate

Researchers have developed a set of diode-based lidar instruments that could help fill important gaps in meteorological observations and fuel a leap in understanding, modeling and predicting weather and climate.

Changes coming to hand-plotted hurricane forecast maps

Daily Commercial

National Hurricane Center meteorologists still hand plot tropical cyclone forecasts on sprawling paper maps of the Atlantic basin, feeling out storm ...

A warming Arctic produces weather extremes in our latitudes

Posted: 28 May 2019 11:01 AM PDT

Atmospheric researchers at the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI) have now developed a climate model that can accurately depict the frequently observed winding course of the jet stream, a major air current over the Northern Hemisphere.

Pocketful of data: Chips with Everything podcast

The Guardian

... and Graihagh Jackson team up for the latest instalment of Science with Everything to look at the history and potential future of weather forecasting.

Others

How Yandex Brings Nowcasting to Russians from Coast to Coast with Yandex.Weather

Yahoo Finance

Yandex, a technology company that builds intelligent products and services powered by machine ... Weather's forecasting throughout their ecosystem.

Aviation

AVTECH releases 'proFLIGHT' weather visualisation flight app

CAPA - Centre for Aviation

AVTECH launched (21-May-2019) 'proFLIGHT', an iPad app that visualises flight related weather information tailored to a single operation's trajectory ...

Artificial intelligence to aid Finnair efficiency

NOBLE

This groundbreaking program can be utilized to gauge weather conditions that could affect flight punctuality. This way airlines will be more prepared ...

Aviation watchdog failed to intervene in faulty pilot training system before fatal crash, investigation ...

TVNZ

It said it's unlikely a mechanical fault was a factor in the crash, but weather ... The watchdog, the Civil Aviation Authority, identified the problems but ...

Jetpack over and out - the funding has run dry

Stuff.co.nz

Jetpack developer Martin Aircraft Company's warehouse is being ... It has investments in Traveller, an all-weather multi-purpose orbit satellite "Martin ...

China Southern Airlines Airbus A380 receives significant hail damage

On the 26th of May 2019, a China Southern Airlines Airbus A380 encountered a nasty hail storm, causing significant damage to the radome, cockpit windows and leading edge surfaces.

Business/Insurance

The business of weather: and managing the risks to your organization

Continuity Central (press release) (blog)

Weather risks are some of the most common cause of disruption to businesses in all regions of the world; and like all risks, the actual impact is related ...

Spending on air treatment products spikes in Malaysia, Singapore and Thailand

EdgeProp.my

“Unusual weather, air pollution, high rainfall and compromised air quality ... In Thailand, the sales of air cleaner combination products (cleaning and ...

Communications/social media

Lambrecht, K.M., B.J. Hatchett, L.C. Walsh, M. Collins, and Z. Tolby, 2019: Improving Visual Communication of Weather Forecasts with Rhetoric. Bull. Amer. Meteor. Soc., 100, 557–563, <https://doi.org/10.1175/BAMS-D-18-0186.1>

Communicating weather-related hazards to the public can be a challenge for meteorologists, particularly given the nature of confidence levels in forecasting science. Despite these challenges, communicating high-impact weather remains extremely important because it has implications for the safety, health, and resilience of impacted communities. Because the dynamics of this issue are complex, solutions to weather hazard communication benefit from interdisciplinary solutions and multiple types of expertise. Our work demonstrates how rhetoric, a foundational communication discipline, can be applied to improving weather forecast communication. Applying a rhetorical framework allows the identification of communication strategies that not only invite public involvement but encourage users to act as conduits for weather information distribution. As a result, trust can be developed between the National Weather Service (NWS) and public audiences. The initial results support the hypothesis that effective public communication from NWS messaging can be improved by incorporating the concept of “commonplaces,” which are the expressions of beliefs, values, and norms that construct community attitudes toward weather or natural hazard forecasts, into visual communication techniques such as NWS Weather Stories.

Energy and Mining

Mine safety and lightning strikes focus of Curtin research

SafeToWork

Mine safety and lightning strikes focus of Curtin research ... quality inside mines are both of strategic importance to Australia in ensuring the integrity of ...

Farming/horticulture/Aquaculture

Extreme weather hits beef company AACo, delivering \$107 million whack

The Sydney Morning Herald

Extreme weather events, severe drought in parts of Australia combined with devastating floods in north Queensland, have delivered a \$107 million hit ...

Rain puts farmers on insurance deadline watch

Insurance Business New Zealand

With unceasing rain keeping farmers out of fields, growers are increasingly weighing how best to get paid and ease the impact from the bad weather ...

Fire

Researchers are using artificial intelligence to help predict the next wildfire

CBC.ca

Meteorologists can reasonably forecast hot weather and lightning storms, but exactly where lightning will strike — and whether it will spark a wildfire ...

Satellites and radar

Coordination Group on Meteorological Satellites meets

Reliefweb

To coordinate this worldwide system, the Coordination Group on Meteorological Satellites (CGMS) was established in 1972. Its main goals are to ...

Transport/roading/shipping/freight

Demand for Road Weather Information Systems Market to Soar from End-use Industries and Push ...

New Daily Herald

The 'Road Weather Information Systems Market' research collated by Persistence Market Research offers a comprehensive analysis of growth trends ...

Carsten Mortensen to chair StormGeo

TradeWinds

Norwegian shipping weather information firm StormGeo has appointed former BW Group CEO Carsten Mortensen as non-executive chairman.

Skipper blames cost-cutting for Waiheke ferry woes, Fullers blames weather

New Zealand Herald

A senior Fullers skipper believes continuing troubles with the company's Waiheke service are due to cost-cutting initiatives. The skipper, who has more ...

Innovation and technologies (inc data and new products)

IBM Weather Signals Uses AI to Enable Predictive Weather-based Business Forecasting

PRNewswire (press release)

ARMONK, N.Y., May 22, 2019 /PRNewswire/ -- IBM (NYSE: IBM) and its subsidiary The Weather Company today announced IBM Weather Signals, ...

5G could mean less time to flee a deadly hurricane, heads of NASA and NOAA warn

Brinkwire (press release)

... warn the issue could set back the world's weather forecasting abilities by 40 ... If we hadn't had that data, Jacobs added, we wouldn't have been able to ... emission requirements aren't enough — it'll lose that critical data unless ...

Climate change / global warming / sea level rise

Are councils walking the talk with the 'climate emergency'?

What does a declaration of a climate emergency really mean for local councils? PAUL GORMAN investigates.

The excitement of watching dominoes toppling, passing energy down the line from one to the next, is always followed by the anti-climax of them lying flat on their faces.

[Climate change: sea level rise could displace millions of people within two generations](#)

Antarctica is further from civilisation than any other place on Earth. The Greenland ice sheet is closer to home but around one tenth the size of its southern sibling. Together, these two ice masses hold enough frozen water to raise global mean sea level by 65 metres if they were to suddenly melt. But how likely is this to happen?

[Stay or go? As weather gets wilder, states urged to prepare for displacement](#)

With disasters uprooting 24 million people a year, pressure grows on governments to reduce the risk, and do more to protect the displaced

[Climate change visualized: How Earth's temperature has changed since 1970](#)

Axios

Analyses from the U.K. Met Office and the World Meteorological Organization also ranked 2018 among the top 4 warmest years on record. Each group ...

Think Tank Review - Special Issue: Climate Change

Ahead of the discussion on climate change at the European Council on 20/21 June, this special issue on climate change compiles articles and studies published in previous issues of the Think Tank Review from January 2018 to May 2019.

[Download Think Tank Review - Special Issue: Climate Change](#)

Cloud seeding / Geoengineering

[Technology that can change the weather is controversial; some say there are benefits](#)

10News

DENVER, Colorado — Cloud seeding can provide between 5% and 15% more snow to help ski areas, farmers and watersheds in the state, ...

Journal and articles online

Welcome to the Bulletin of the Canadian Meteorological and Oceanographic Society

In this issue (Vol.47 No.2) of the CMOS Bulletin, we provide a brief summary of the recently published “Canada’s Changing Climate Report”, part of a national assessment of how and why Canada’s climate is changing, the impacts of these changes, and how we are adapting. Bob Kochtubajda and colleagues share some elements of their wildfire research, based on their recent paper published in Atmosphere-Ocean, on the extreme 2014 wildfire season in the Northwest Territories. An interesting article by Bronwen McIlroy-Young discusses how TV weathercasters might be perfectly placed to be effective climate change communicators. Society president Paul Kushner shares some thoughts on the recent severe flooding in Ontario, Quebec and New Brunswick, and the importance of building resilience to climate change. We also include a short write-up on long-time member Wayne Evans, who recently passed. He leaves behind a scientific community who have greatly benefited from his contributions to atmospheric and space science. We also include several items of interest to members, including a piece by Bob Jones on CMOS Society student awards, a short summary of student activities at the upcoming CMOS Congress, books available for review, and more.

[Download Vol.47 No.2 of the CMOS Bulletin](#)

Quarterly Journal of the Royal Meteorological Society

[Early View](#)

Online Version of Record before inclusion in an issue

[Effects of topography on in-canopy transport of gases emitted within dense forests](#)

Bicheng Chen, Marcelo Chamecki, Gabriel G. Katul

Version of Record online: 09 May 2019

A sketch of the simulation set-up. This is stretched in the vertical direction from the real aspect ratio for clarity. Z is a displaced coordinate to measure vertical distance with respect to the topography.

[Dependence on initial conditions versus model formulations for medium-range forecast error variations](#)

Linus Magnusson, Jan-Huey Chen, Shian-Jiann Lin, Linjiong Zhou, Xi Chen

Version of Record online: 09 May 2019

Correlation of errors between different experiments (see legend) for 500 hPa geopotential height over Europe (a) and contiguous US (b), including confidence intervals from 5th to 95th percentile based on bootstrap method for FV3gfs versus FV3ec (green shading). While the

models with the same initial conditions have the highest correlations of errors over Europe, the correlations are higher for the experiment with a similar model over contiguous US.

Tropical cyclogenesis at and near the Equator

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

Version of Record online: 08 May 2019

The formation of tropical cyclones within a few degrees latitude of the Equator is investigated using European Centre for Medium-Range Weather Forecasts (ECMWF) analyses of some prominent cyclogenesis events there. In the real events investigated, vortex formation occurred within a broadscale counter-clockwise flow that encompasses a region of predominantly positive absolute vertical vorticity typically extending more than 5° south of the Equator. Patches of enhanced vertical vorticity form within this region as a result of vorticity stretching by deep convection and these patches are organized by the convection, the collective effects of which produce an overturning circulation that fluxes vorticity at low levels towards some centre within the convective region.

On the properties of ensemble forecast sensitivity to observations

Shunji Kotsuki, Kenta Kurosawa, Takemasa Miyoshi

Version of Record online: 06 May 2019

The Ensemble Forecast Sensitivity to Observation (EFSO) is an efficient approach to diagnosing observation impacts, quantifying how much each observation improves or degrades a subsequent forecast with a given verification reference. With a global atmospheric data assimilation system NICAM-LETKF, this study demonstrates three important issues possibly leading to overestimating observation impacts: verification reference, relaxation-to-prior methods to the initial conditions of the EFSO, and deterministic baseline forecasts that represent the forecast without data assimilation.

Evaluation of remotely sensed rainfall products over Central Africa

Pierre Camberlin, Geoffrey Barraud, Sylvain Bigot, Olivier Dewitte, Fils Makanzu Imwangana, Jean-Claude Maki Mateso, Nadège Martiny, Elise Monsieus, Vincent Moron, Thierry Pellarin, Nathalie Philippon, Muhindo Sahani, Gaston Samba

Version of Record online: 06 May 2019

An intercomparison of seven gridded rainfall products incorporating satellite data is carried out over Central Africa, by evaluating them against observed, partly unpublished datasets. All the

products fairly well reproduce the mean rainfall regimes, but their skills differ for the interannual variability of monthly rainfall and for daily rainfall occurrence and amounts.

The added value of convection-permitting ensemble forecasts of sea breeze compared to a Bayesian forecast driven by the global ensemble

Carlo Cafaro, Thomas H. A. Frame, John Methven, Nigel Roberts, Jochen Bröcker

Version of Record online: 06 May 2019

The added value is quantified of probabilistic forecasts of sea breeze occurrence derived from a convection-permitting ensemble (green) relative to a Bayesian forecast (blue) conditioned on coarser-resolution predictors. In particular we examined reliability and resolution properties of the two probabilistic forecasts to assess whether the convective-scale version can provide additional information.

Accelerating radiative transfer calculations for high-resolution atmospheric models

Howard W. Barker, Jiangnan Li

Version of Record online: 06 May 2019

oud water path, cloud-top altitude, and normalized nadir visible radiance for the boundary layer ($504 \times 504 = 254,016$ columns with $\Delta x = 0.04$ km) and convective cloud ($1,536 \times 1,536 = 2,359,296$ columns with $\Delta x = 0.1$ km) domains. For the visible images, the Sun had a zenith angle of 60° and azimuth of 45° counter-clockwise from the top.

Understanding the vertical structure of potential vorticity in tropical depressions

Varun S. Murthy, William R. Boos

Version of Record online: 06 May 2019

Time-averaged (a) diabatic PV tendency, (b) horizontal advection, (c) vertical advection, and (d) total PV tendency (all PVU/day) during the first 2 days of the axisymmetric 2D model in response to a combination of stratiform and deep convective heating. Diabatic PV tendency includes both stretching-like and tilting-like tendencies, with the tilting-like tendency radially restricted to 10 km near the heating boundary. Negative PV tendencies are enclosed by a thin dotted line. Lowest panels depict the (e) PV (PVU) and (f) absolute vorticity (10^{-5}s^{-1}) on day 2. The vertical dotted line in all panels indicates the radius ($r = 250$ km) within which the heating is applied.

Accepted Articles

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

Stable boundary-layer relative humidity profiles and the conditions for onset of radiation fog over land

S. H. Derbyshire

First Published: 09 May 2019

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Journal of Applied Meteorology and Climatology - Volume: 58, Number: 5 (May 2019)

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Severe Hail Fall and Hailstorm Detection Using Remote Sensing Observations

Elisa M. Murillo and Cameron R. Homeyer

Weather Radar Network Benefit Model for Tornadoes

John Y. N. Cho and James M. Kurdzo

The Observed Effects of Utility-Scale Photovoltaics on Near-Surface Air Temperature and Energy Balance

Ashley M. Broadbent, E. Scott Krayenhoff, Matei Georgescu, and David J. Sailor

Local-Scale Valley Wind Retrieval Using an Artificial Neural Network Applied to Routine Weather Observations

Florian Dupuy, Gert-Jan Duine, Pierre Durand, Thierry Hedde, Pierre Roubin, and Eric Pardyjak

Modeling Road Surface Temperature from Air Temperature and Geographical Parameters—Implication for the Application of Floating Car Data in a Road Weather Forecast Model

Yumei Hu, Esben Almkvist, Torbjörn Gustavsson, and Jörgen Bogren

On the Influence of Swell Propagation Angle on Surface Drag

Edward G. Patton, Peter P. Sullivan, Branko Kosović, Jimy Dudhia, Larry Mahrt, Mark Žagar, and Tomislav Marić

Subsampling Impact on the Climate Change Signal over Poland Based on Simulations from Statistical and Dynamical Downscaling

Abdelkader Mezghani, Andreas Dobler, Rasmus Benestad, Jan Erik Haugen, Kajsa M. Parding, Mikolaj Piniewski, and Zbigniew W. Kundzewicz

Seasonal Changes in Water and Energy Balances over the Appalachian Region and Beyond throughout the Twenty-First Century

Rodrigo Fernandez and Nicolas Zegre

Synoptic and Large-Scale Determinants of Extreme Austral Frost Events

James S. Risbey, Didier P. Monselesan, Terence J. O’Kane, Carly R. Tozer, Michael J. Pook, and Peter T. Hayman

Application of the Cell Perturbation Method to Large-Eddy Simulations of a Real Urban Area

Gwang-Jin Lee, Domingo Muñoz-Esparza, Chaeyeon Yi, and Hi Jun Choe

Implications of a Climate-Changed Atmosphere on Cool-Climate Viticulture

Steven R. Schultze and Paolo Sabbatini

Impacts of High-Resolution Urban Canopy Parameters within the WRF Model on Dynamical and Thermal Fields over Guangzhou, China

Chong Shen, Xiaoyang Chen, Wei Dai, Xiaohui Li, Jie Wu, Qi Fan, Xuemei Wang, Liye Zhu, Pakwai Chan, Jian Hang, Shaojia Fan, and Weibiao Li

Quarterly Journal of the Royal Meteorological Society

Early View

Online Version of Record before inclusion in an issue

Assimilation impact of high-temporal-resolution volume scans on quantitative precipitation forecasts in a severe storm: Evidence from nudging data assimilation experiments with a thermodynamic retrieval method

Shingo Shimizu, Koyuru Iwanami, Ryohei Kato, Namiko Sakurai, Takeshi Maesaka, Kaori Kieda, Yukari Shusse, Shin-ichi Suzuki

Version of Record online: 15 May 2019

Flowchart of the analysis method used in this study. (a) Wind analysis was performed at two consecutive times. (b) Background wind was calculated by taking the mean operator from the numerical simulations and blending it with wind analysis to fill data-void regions. (c) Thermodynamic retrieval was performed to deduce the total potential temperature. (d) Nudging assimilation was performed to modify the forecast variable. u , v , w and q_x are the three wind components and the mixing ratio of hydrometeors (rain (q_r), snow (q_s) and graupel (q_g)), respectively. θ and θ_v are the potential and virtual potential temperatures, respectively. π is the non-dimensional pressure. q_{vs} is the saturated mixing ratio of vapour. Barred quantities represent a horizontal average of the control run output (numerical simulation without data assimilation). Variables with a single prime represent observation. The sub-plots of 1 and 2 indicate quantities at $t = T$ and $t = T + n\Delta t$, respectively.

Sensitivity of WRF model simulations to parametrizations of depositional growth of ice crystal during the landfall of Typhoon Fitow (2013)

Huiyan Xu, Xiaofan Li

Version of Record online: 15 May 2019

- Sensitivity tests reveal that the simulations are especially sensitive to ice nuclei concentration when the Fletcher (1962) scheme is used.
- The Shen et al. (2014) scheme works better than the Zeng scheme by changing the radius of base ice crystal from 0 to 40 μm .
- When DeMott et al. (2010) ice crystal concentration parametrization is applied to the Zeng scheme, the anomalous rainfall is also significantly weakened.

Time series of (a) hourly rainfall for the observation (black solid line), model runs (colour lines) from 1200 UTC 6 October 2013 on the 3 km mesh on land in the innermost domain of WRF modelling, (b) the best track (black line with blue dots) issued by Chinese Central Weather Bureau (CCWB) and the three-hourly simulated tracks (colour lines with coloured dots), (c) time series of minimum sea-level pressure (SLP; hPa) of the best-track analysis (black solid line) and the simulated cyclone (colour lines). (a,b) use the same legend labels as (c). * denotes locations of the cities in Zhejiang and Fujian seriously affected by typhoon Fitow (2013).

Storm surge and seiche modelling in the Adriatic Sea and the impact of data assimilation

Marco Bajo, Iva Medugorac, Georg Umgiesser, Mirko Orlic

Version of Record online: 14 May 2019

The Adriatic Sea and its coasts. The dots show the locations of the sea level stations.

A new high-resolution Meteorological Reanalysis Italian Dataset: MERIDA

Riccardo Bonanno, Matteo Lacavalla, Simone Sperati

Version of Record online: 13 May 2019

The aim of this work is to develop a new MEteorological Reanalysis Italian DATaset (MERIDA) able to respond to the energy stakeholders, who need reliable meteorological data to implement effective adaptation strategies to operate the electric system safely. MERIDA consists of a dynamical downscaling of the new European Centre for Medium-range Weather Forecasts (ECMWF) global reanalysis ERA5 using the Weather Research and Forecasting (WRF) model, which is configured to describe the typical weather conditions of Italy.

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.

Possible Roles of Fall Speed Parameters of Different Graupel Densities on the Microphysics and Electrification in an Idealized Thunderstorm

Xiaoran Ouyang, Yan Yin, Hui Xiao, Fengxia Guo

First Published: 17 May 2019

Application of Warn-on-Forecast System for Flash-Flood Producing Heavy Convective Rainfall Events

Nusrat Yussouf, Kent H. Knopfmeier

First Published: 17 May 2019

An Analysis of the Hines and Warner-McIntyre-Scinocca Nonorographic Gravity Wave Drag Parameterizations

M. Majdzadeh, G.P. Klaassen

First Published: 15 May 2019

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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.

May 28, 2019

News

Research Brief: Southern Ozone Hole Observations Could Improve Seasonal Forecasts

May 28, 2019 - Centre of Excellence for Climate Extremes

Researchers have performed the first study to investigate whether climate models can capture the influence of the year-to-year ozone hole size on Australian temperatures. The aim was to explore whether this could help seasonal predictions of Australian temperatures.

Read MORE

For 2019, There's Good News with the 3-day Hurricane Cone Forecast

May 28, 2019 - Daily Commercial

Improvements in tropical cyclone track forecasts the past five years means the 2019 hurricane season will open with a smaller cone of uncertainty, but experts warn gains in accuracy are slowing and may have already hit a wall.

Read MORE

AP: Cost of flood buyouts has been rising over past decade

May 27, 2019 - MSN.com

Patience is wearing thin in Mosby, a town of fewer than 200 people with a core of lifelong residents and some younger newcomers drawn by the cheap prices of its modest wood-frame homes. Residents watched nervously this past week as high waters again threatened the town.

[Read MORE](#)

[Severe thunderstorms unleash damaging tornadoes from Iowa to Indiana on Memorial Day](#)

May 27, 2019 - AccuWeather

A relentless week-long severe weather pattern continued to unleash destructive tornadoes across parts of the Midwest on Monday.

[Read MORE](#)

[America's upgraded weather forecast model still lags behind Europe](#)

May 26, 2019 - Axios

The National Oceanic and Atmospheric Administration is about to roll out the new version of its main weather forecasting model next month — but it won't help the agency gain much ground against its international rivals for the title of having the world's most accurate weather model.

[Read MORE](#)

[NOAA Hurricane Hunters help victims from the sky with aerial imagery](#)

May 25, 2019 - Wfla.com

Before and during the storm, the NOAA Hurricane Hunter fleet of aircraft played -- as always -- a pivotal role in tracking and forecasting Hurricane Michael. After the storm made landfall, a multi-purposed NOAA aircraft, the twin-engine King Air Beechcraft carried out a different critical task.

[Read MORE](#)

[3 Things To Know About The Memorial Day Heat Wave In The Southeast](#)

May 25, 2019 - Forbes

Parts of the southeastern U.S. will be sweltering through the Memorial Day weekend and beyond. Here are three things that you need to know about the first heatwave of the season.

[Read MORE](#)

[Changes coming this hurricane season to traditional hand-plotted forecast maps](#)

May 24, 2019 - Palm Beach Post

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