

A suggested link from our President:

European forecasters to simulate weather at 1km resolution on supercomputer

see

<https://www.meteorologicaltechnologyinternational.com/news/supercomputers/european-forecasters-to-simulate-weather-at-1km-resolution-on-supercomputer.html>

BY PAUL WILLIS ON JANUARY 9, 2020 SUPERCOMPUTERS

Scientists from the European Centre for Medium-Range Weather Forecasts (ECMWF) have been selected to carry out research on climate simulations on the world’s most powerful supercomputer.

After a highly competitive selection process, the team from the UK-based center were awarded 500,000 node-hours on the Summit supercomputer at the Oak Ridge National Laboratory in Tennessee.

The team, which consists of meteorologists Nils Wedi, Peter Bauer and Peter Duben, will use their time on Summit to explicitly simulate deep convection at the global scale.

They aim to run a global weather simulation for at least a season, and potentially for an entire year. The supercomputer will be able to provide them with 1km resolution.

The researchers called this level of resolution “a quantum leap” forward for their work since computational cost limitations mean that the grid spacing in today’s highest-resolution operational global models is usually in the order of 10km, and is even coarser for seasonal and climate predictions.

However, running such a long simulation – often referred to as a Nature Run – at such high resolution will produce vast amounts of data.

The team will be helped in their work by Oak Ridge scientist Valentine Anantharaj.

“Deep convection affects the vertical redistribution of energy, momentum and heat in the atmosphere,” said Wedi, the head of Earth System Modelling at ECMWF. “Our inability to resolve these processes is a major source of uncertainty in weather and climate predictions.”

“Going down to 1km is a quantum leap which will enable us to see how explicitly simulated deep convection interacts with and induces global changes in weather patterns.”

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New Zealand weather and climate news

Courtesy of MetService library

MetService mentions

Water restrictions in place across regions on verge of drought

Water restrictions are being put in place around the country as the dry summer weather begins to bite.

MetOcean

Wind and Metocean Data to De-risk Future Offshore Wind Farms

Hydro International

France based company Akrocean has been awarded a four-year deal with Meteo-France to deliver wind and metocean data required to de-risk future ...

Oceans reached record temperatures again in 2019

A new analysis says the heat in the world's oceans reached a new record last year.

The authors - a team of US and Chinese scientists who compiled data from nearly 4,000 sensors across the oceans - say it shows the irrefutable and accelerating heat of the planet.

ECMWF

AMD to Power Atos Supercomputer at ECMWF

insideHPC

Weather forecasting is computationally intensive and demands the best in ... Günther Tschabuschnig, Convener of the ECMWF Technical Advisory ...

Volcano alert/watch

Minor volcanic unrest at Mt Ruapehu

SunLive

Minor volcanic unrest at Mt Ruapehu ... The Volcanic Alert Level reflects the current level of volcanic activity and is not a forecast of future activity.

Extreme weather (and other news) – Australia and Pacific

Evacuation centres opened as Cyclone Tino aims for Fiji, Tonga

[By RNZ](#)

Evacuation centres have been opened in Fiji's north and people are being told to hunker down as a rapidly intensifying Cyclone Tino approaches.

Meanwhile, preparations are underway in Tonga with the capital, Nuku'alofa, sitting directly in Tino's path.

The cyclone, which was upgraded to a category one early on Friday morning, was strengthening as it sat the south of Fiji's western Rotuma island, the Fiji Meteorological Service said.

Fiji forecasters say tropical disturbance set to become cyclone

Fiji's meteorological service is predicting a tropical disturbance to the west northwest of the country will develop into a tropical cyclone.

Tropical cyclone alert issued for Fiji's Rotuma islands

A cyclone alert has been issued for Fiji's Rotuma islands, as a tropical depression continues to intensify.

Australian government report predicted wildfires

A 2008 report commissioned by the Australian government predicted that climate change would cause the fire season to start earlier and be more intense after about 2020. [Read more](#)

Bureau of Meteorology forecasts rain for Australia's firegrounds

RNZ

Over the last few months a series of dry frontal systems have swept across parched southern Australia, generating dry lightning and new fires. "At least ...

As Bushfires Blaze On, Parts of Australia Broil With the Highest Temperatures on Earth

The brutal heat and high winds whipped up already fierce wildfires, producing giant fire clouds. Here is what it has looked like from space.

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

Severe winter weather has struck parts of Afghanistan and Pakistan, leaving 48 dead

Yahoo News

Severe winter weather has struck parts of Afghanistan and Pakistan, leaving ... Does China or America Have Better Missiles in the South China Sea?

Salty water in Bangkok is new 'reality' as sea pushes farther inland

Bangkok's water authority says tap water is becoming saline as seawater pushes up the depleted Chao Phraya river, a growing risk faced by many of Asia's coastal cities

At least 67 killed by avalanches in Pakistan, India-government officials say

At least 57 people have been killed and others are missing after avalanches in Pakistan-controlled Kashmir over the last 24 hours, government officials say.

Extreme weather (and other news) – Americas and Europe

Storm Brendan brings damaging winds and flooding to United Kingdom and Ireland

A powerful storm has wreaked havoc in large parts of the UK and Ireland, bringing flooding and high winds.

International news and research

U.S. billion-dollar weather disasters doubled in last decade-report

Between 2010 and 2019, there were 119 disasters such as floods, hurricanes and wildfires with losses exceeding \$1 billion

Everyday weather is linked to human-caused climate change in new study

For the first time, scientists have detected the “fingerprint” of human-induced climate change on daily weather patterns at the global scale. If verified by subsequent work, the findings, published Thursday in Nature Climate Change, would upend the long-established narrative that daily weather is distinct from long-term climate change.

Aeolus winds now in daily weather forecasts

Phys.Org

ESA's Aeolus satellite has been returning profiles of Earth's winds since it ... Data on wind will be ingested in weather models to improve forecasts.

Weather forecasters hone predictions for Winter Olympics on snowy mountain

Chinadaily USA

Meteorologists have improved their ability to provide weather forecasts for the 2022 Beijing Winter Olympics thanks to exacting preparation and a new ...

Weather companies

AccuWeather, Plume Labs partnership to put users of popular, free app in more control of their ...

PRNewswire (press release)

This strategic alliance with Plume Labs, the first of its kind with a weather company, extends the ability of Plume Labs to reach even more people and

Latest Study of 120 Million Forecasts Proves AccuWeather Forecasts Are Most Accurate

PRNewswire (press release)

The study analyzed 120 million forecasts from over 1,000 locations globally over a four-year period ending December 31, 2018, and AccuWeather ...

5G network

Weather experts call for further dialogue to limit 5G impact on weather forecasting

SpaceNews

World Radiocommunication Conference delegates agreed to allow 5G technologies to operate from 24.25-27.5 GHz as long as equipment limits the ...

Advertising/promotion

Gen Z and boomers have nothing in common when it comes to their most trusted brands

Business Insider

Boomers gravitate toward delivery services, food brands, and the Weather Channel. Sign up for Business Insider's retail newsletter, The Drive-Thru.

Aviation

Air Force turns to partners for weather forecasting support

SpaceNews

Air Force turns to partners for weather forecasting support ... partners for help gathering and making sense of terrestrial and space weather data, Air ...

South African Airways ordered to pay Zimbabwean weather fees

ch-aviation

South African Airways ordered to pay Zimbabwean weather fees ... The airline also accused the ministry and the Civil Aviation Authority of Zimbabwe ...

Business/Insurance

Businesses cautiously optimistic in NZIER confidence survey

Business confidence is improving, an NZIER survey shows, although firms remain cautious about their own activity.

Communications/social media

MediaWorks sells TV studios

MediaWorks has reached an agreement to sell its Auckland property, housing its head office and television studios.

Energy and Mining

Windlab announces closure of US office

Windlab Limited (ASX:WND) ('Windlab' or the 'Company') today announces that it plans to exit the North American market.

Farming/horticulture/Aquaculture

Hail damage research to fill knowledge gap

One of New Zealand's newest research centers is working to fill in the information gap for winegrowers hit by extreme weather events.

Fire

Weather forecasting team tracks, predicts 'fire-cloud' phenomenon

PRNewswire (press release)

But the number of experts and data available are still relatively scarce; the science is still in its infancy. Collaborating with NASA, NOAA, and academia.

Living with fire demands a long-term perspective

Policy Forum

... in protecting Ngadju Country in southern Western Australia. Unfortunately, since December, lightning has ignited 11 fires across Ngadju country.

Space weather

Researchers discover a new source of space weather — too close to home

UCLA Newsroom

The weather satellite proved that this near-Earth reconnection stimulated ion and electron acceleration to high energies, posing a hazard to hundreds ...

Transport/roading/shipping/freight

Hiding In High Ship Traffic: How One US Company Tracks Vessels At Busiest Times

Forbes

... \$40 million round in September 2019 to bring weather forecasting products into the Asian market. Weather forecasting was one of the data products ...

Innovation and technologies and AI

Google's AI predicts local precipitation patterns 'instantaneously'

VentureBeat

In a paper and accompanying blog post, the tech giant detailed an AI ... Company — the weather forecasting and information technology company it ...

'Coalition of the willing': Extreme weather drives startups to commercialise fire tracking tech

The Sydney Morning Herald

It brings a group of Australian startups working on "extreme weather technologies" together to prepare their pitches for investors and further ...

Atos supercomputer to enhance weather prediction capabilities for leading European numerical

...

GlobeNewswire (press release)

We trust in its ability to supply and integrate the best technologies available, but also in its proven expertise to deliver effective solutions to the weather ...

Climate change / global warming / sea level rise

Time for Government to step up on sea level rise - new research

Local councils have been crying out for more central government help with planning for sea level rise. Now a series of independent reports has backed their call.

A series of independent reports into liability for sea level rise has concluded it is time for the government to step up and tell local councils what to do.

Journal and articles online

On Bridging A Modeling Scale Gap: Mesoscale to Microscale Coupling for Wind Energy

Sue Ellen Haupt, Branko Kosovic, William Shaw, Larry K. Berg, Matthew Churchfield, Joel Cline, Caroline Draxl, Brandon Ennis, Eunmo Koo, Rao Kotamarthi, Laura Mazzaro, Jeffrey Mirocha, Patrick Moriarty, Domingo Muñoz-Esparza, Eliot Quon, Raj K. Rai, Michael Robinson, and Gokhan Sever

Bulletin of the American Meteorological Society Vol. 100, No. 12, December 2019

Cloud and Weather Symbols in the Historic Language of Weather Map Plotters

Robert A. Houze and Rebecca Houze

Bulletin of the American Meteorological Society Vol. 100, No. 12, December 2019

A global evaluation of multi-model ensemble tropical cyclone track probability forecasts

Helen A. Titley, Rebecca L. Bowyer, Hannah L. Cloke

Version of Record online: 01 January 2020

Track probability forecasts for named tropical cyclones (as shown in the example for Hurricane Irma) are verified for three global ensembles and their combined multi-model ensemble across all global basins. The multi-model ensemble increases the skill and value of the track probability forecasts over the best-performing individual ensemble in every basin. The skill shown compared to a deterministic consensus reference forecast illustrates the potential benefit of pulling through situation-based uncertainty information from dynamic multi-model ensembles into operational forecasts and warnings.

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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.

January 14, 2020

American Meteorological Society Celebrates 100 Years At Annual Meeting in Boston

January 14, 2020 - AGU Blogosphere

All of us have one thing in common though, a sense of wonder about the things we see in the sky and what falls from it.

[Read MORE](#)

NOAA, NASA to announce 2019 global temperature, climate conditions

January 10, 2020 - NOAA

Climate experts from NOAA and NASA will release new data on the global temperatures for 2019 and the most important climate trends of the year during a media briefing on Wednesday, January 15, at the American Meteorological Society's (AMS) annual meeting in Boston and through a news teleconference.

[Read MORE](#)

American Meteorological Society will mark 100 years at Hub symposium

January 9, 2020 - The Boston Globe

The forecast? Festive.

[Read MORE](#)

Google says new AI models allow for 'nearly instantaneous' weather forecasts

January 14, 2020 - The Verge

Weather forecasting is notoriously difficult, but in recent years experts have suggested that machine learning could better help sort the sunshine from the sleet.

[Read MORE](#)

Amazing Earth: Satellite Images from 2019

January 10, 2020 - NASA

What better way to reflect on the events of 2019 than through the “eyes” of NASA’s fleet of Earth-observing satellites and instruments on the International Space Station?

[Read MORE](#)

NOAA set to update space weather fleet

January 13, 2020 - SpaceNews

The National Oceanic and Atmospheric Administration is preparing to update its aging space weather fleet with instruments to gather imagery of coronal mass ejection and monitor solar winds.

[Read MORE](#)

Aeolus winds now in daily weather forecasts

January 13, 2020 - Phys.org

ESA's Aeolus satellite has been returning profiles of Earth's winds since 3 September 2018, just after it was launched—and after months of careful testing these measurements are considered so good that the European Centre for Medium-Range Weather Forecasts is now using them in their forecasts.

[Read MORE](#)

Australia's Wildfires Are Releasing Vast Amounts Of Carbon Emissions

January 12, 2020 - National Public Radio

Satellite images from the National Oceanic and Atmospheric Administration show a haze from the deadly fires spreading over South America.

Read MORE

Weather experts call for further dialogue to limit 5G impact on weather forecasting

January 14, 2020 - SpaceNews

Anyone who thinks the international weather community has given up the fight to protect key portions of the radio frequency spectrum from 5G interference is mistaken.

Read MORE

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John Maunder blogs

<https://www.sunlive.co.nz/blogs/14248-solar-activity-and-spotless-days.html>

<https://www.sunlive.co.nz/blogs/14248-solar-activity-and-spotless-days.html>

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