# Celebrating 8 years of the Australian VLab Centre of Excellence Regional Focus Group meetings, with a summary of the past two years.

Mr Bodo Zeschke, Bureau of Meteorology Training Centre.

Presentation at the
Joint Australia China VLab Centres of Excellence
Regional Focus Group meeting, 29th October 2021

Australian Government
Bureau of Meteorology

# Content of this session

1. Highlights. Celebrating achievements
2. Presenters from the AOMSUC-11 host nation and other countries.
3. New resources available in the Australian VLab Centre of Excellence Regional Focus Group meeting archive:
   - Tropical Cyclone analysis and forecasting
   - Heavy precipitation and flooding
   - Other severe weather case studies
   - Satellite viewing platforms
   - Remote delivery of training and assessment

Australian Government
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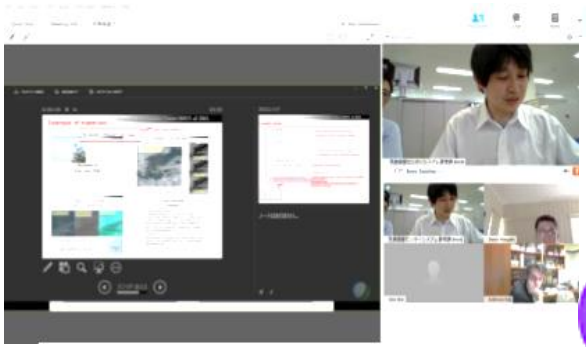
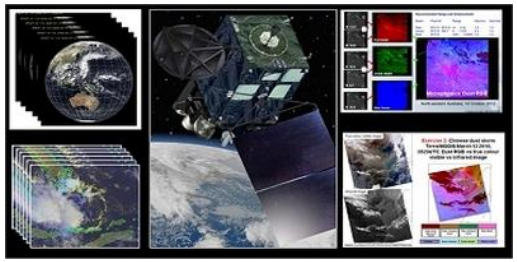
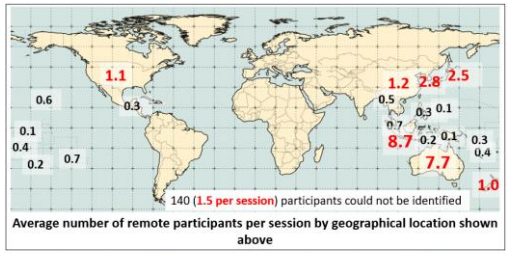
# First Regional Focus Group meeting October 2013





HAPPY BIRTHDAY 8th

The past 8 years of Regional Focus Group meetings – statistics October 2013 to September 2021




Average number of remote participants per session by geographical location shown above

Total number of remote stakeholders attending the 92 sessions = 2934+

Average number of participants per session = 31.9+

2934+ attendees, 92 sessions

.... 92 meetings on a monthly basis

93 meetings now

# The past 2 years of Regional Focus Group meetings – statistics January 2020 to September 2021

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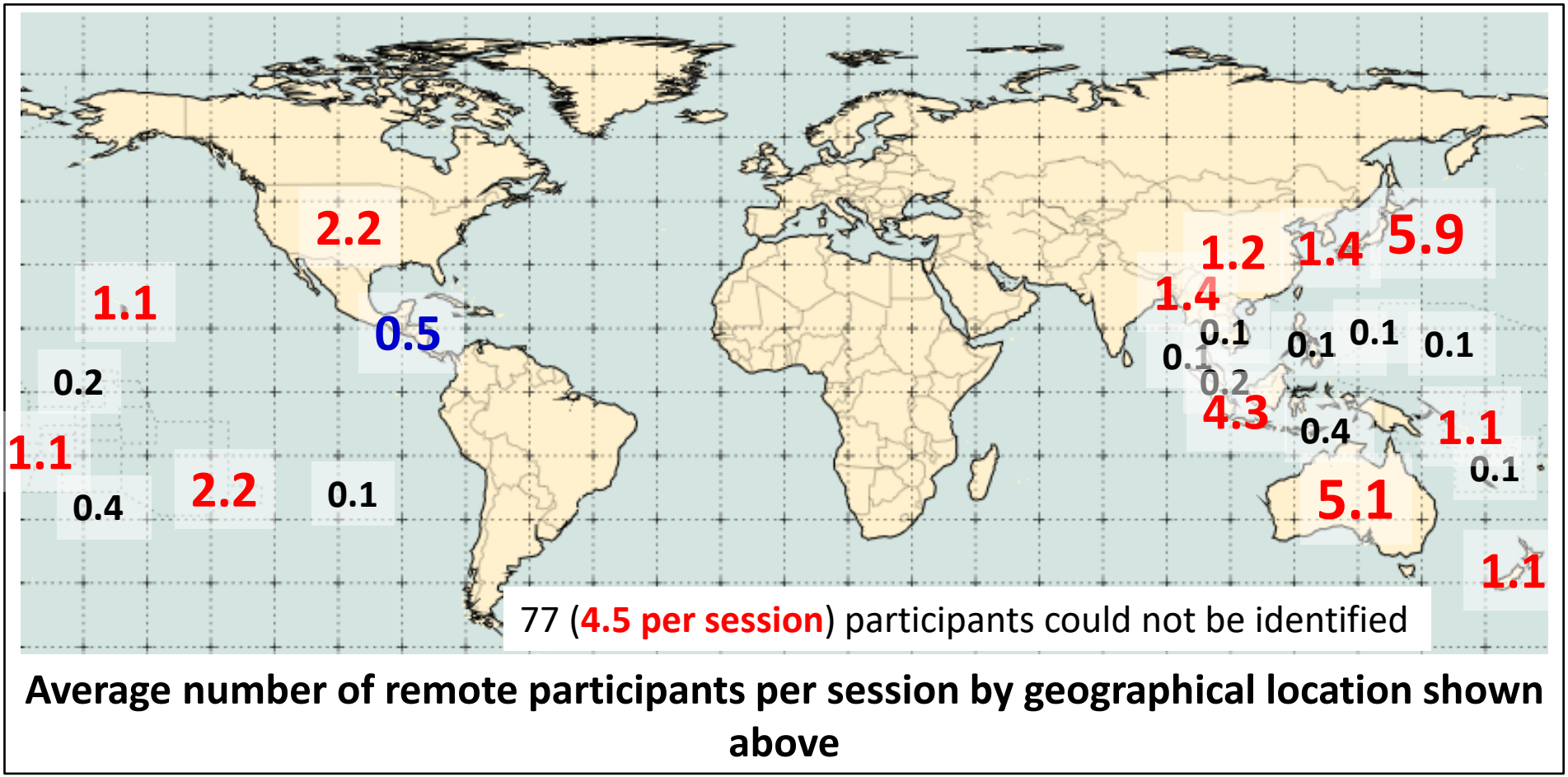


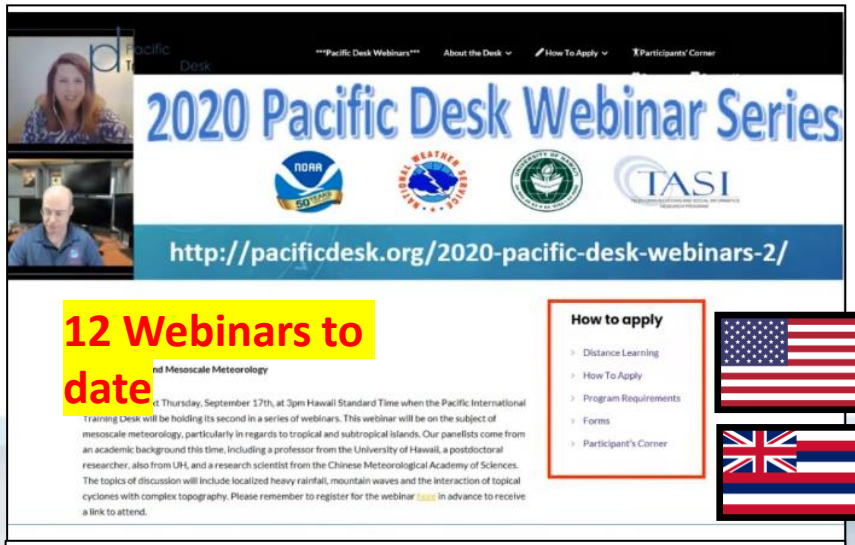

**Average number of remote participants per session by geographical location shown above**

**Total number of remote stakeholders attending the 17 sessions = 590+**

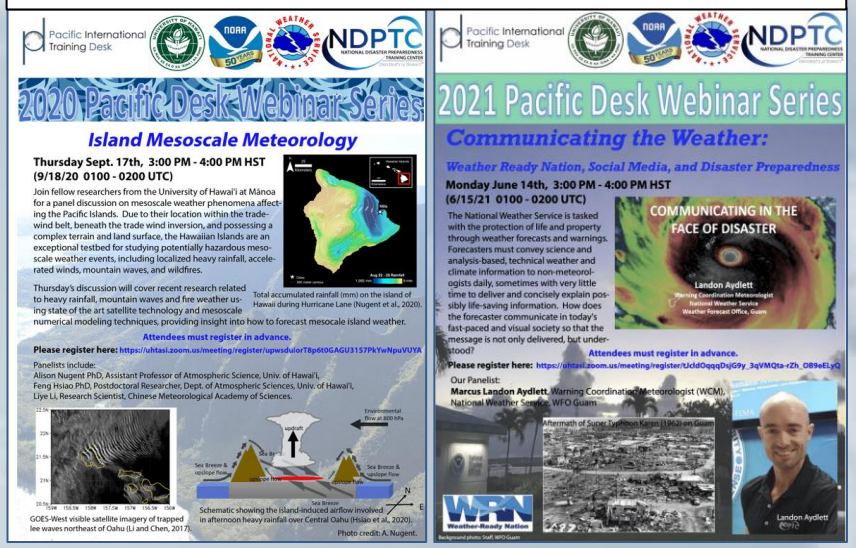
**Average number of participants per session = 34.7+**

# Celebrating other achievements during 2020 / 2021


**Celebrating the 100th BMKG Indonesia Online Group Discussion**




**2 years of NOAA-NWS / UH-TASI Pacific Desk Webinars**

Australian Government
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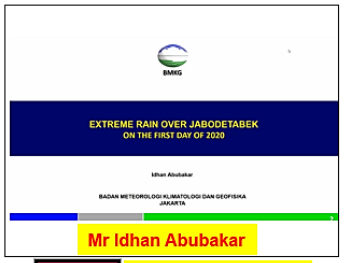
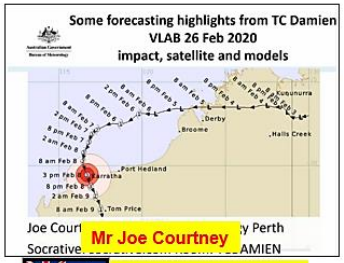
# Highlights of the VLab Sessions of 2020 / 2021: A constellation of presenters from across the region



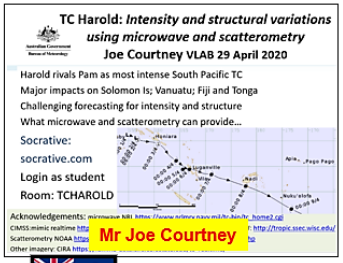

Mr Idhan Abubakar

January 2020




Mr Joe Courtney

February 2020




Mr Joe Courtney

April 2020


Mr Di Xian

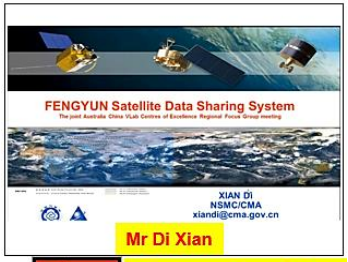
July 2020


Mr Jun Park

August 2020


Ms. Ratih Prasetya

August 2020




Mr Di Xian

September 2020


Mr Wen Bo, Director of Education Administration Office CMATC

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Ms Jennifer Strahl

September 2020


Dr Curtis Seaman

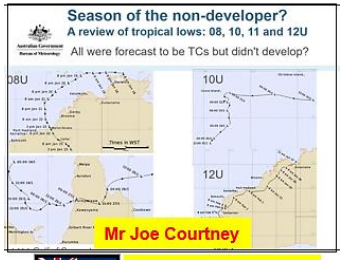
October 2020


Mr William Straka III

November 2020


Mr Joe Courtney

December 2020

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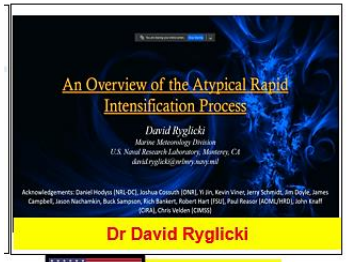


Dr David Ryglicki

May 2021


Mr Di Xian

June 2021


Ms Ok Hee Kim

August 2021

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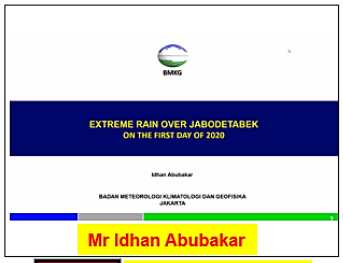


Mr Idhan Abubakar

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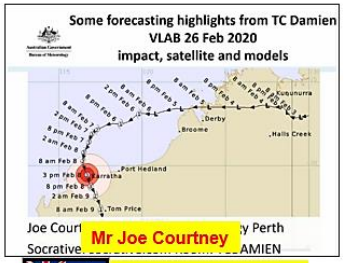
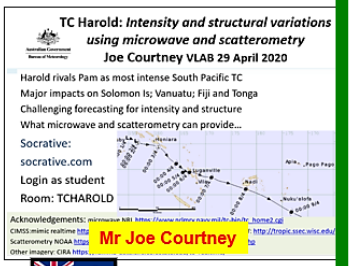



Mr Joe Courtney

February 2020

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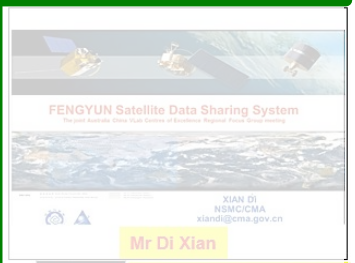


Mr Di Xian

September 2020




Mr Wen Bo, Director of Education Administration Office CMATC

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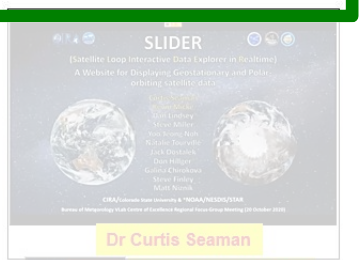


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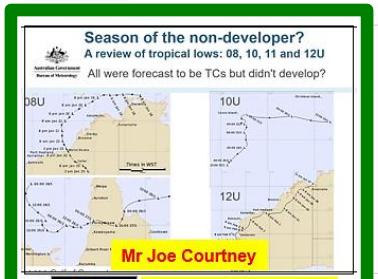


Mr Joe Courtney

February 2021




Dr David Ryglicki

May 2021


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June 2021


Ms Ok Hee Kim

August 2021

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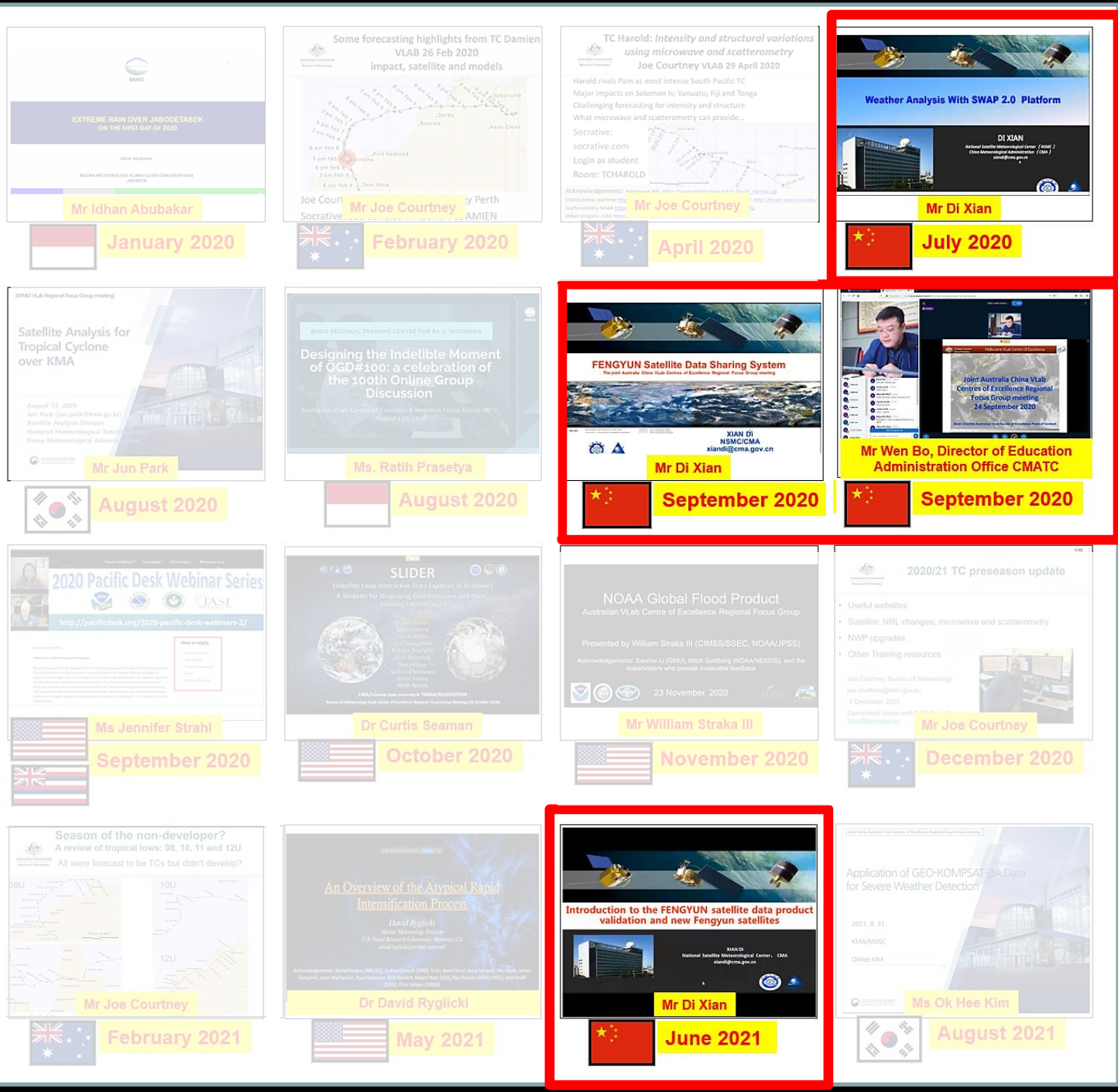

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February 2020




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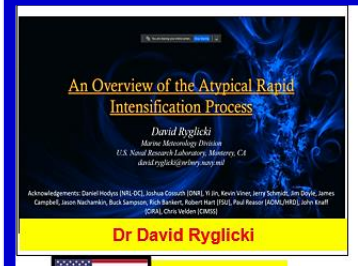


Dr David Ryglicki

May 2021




Mr Di Xian

June 2021




Ms Ok Hee Kim

August 2021

# Recordings of our Regional Focus Group Discussions

http://www.virtuallab.bom.gov.au/archive/regional-focus-group-recordings/

Australian Government
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VLab

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## Regional Focus Group Discussion Recordings

Recordings of Australian VLab Centre of Excellence Regional Focus Group (RFG) meetings are given below. Locations with limited Internet speed may wish to download the file before playing it (right mouse click on the link, then "Save Target As").

| Recordings (file size) | Content of the Regional Focus Group meetings |
|---|---|
| | **The next Australian VLab Centre of Excellence Regional Focus Group meeting will be conducted in collaboration with the China Meteorological Administration Training Centre during the AOMSUC-11 Training Event on the 29th October 2021**<br>More information will be provided closer to time<br>The AOMSUC-11 web site is located at this LINK |

**30th September 2021 Regional Focus Group meeting**

**Topics of discussion included:**

- **Outline and summary of the Online 2021 BMTC Graduate Diploma of Meteorology Aviation Forecast Simulation, including three short case studies**, (Mr Bodo Zeschke Australian Bureau of Meteorology Training Centre) 13 minutes duration (37Mb .mp4)

  1. *Warm cloud top thunderstorms over northern Queensland, 14th September 2021 14 minutes duration (62Mb .mp4)*
  2. *Interpretation of an unusual Airmass RGB signture over the Australian region, 13th September 2021 9 minutes duration (50Mb .mp4)*
  3. *Anomalous signature detected by meteorological RADAR 4 minutes duration (33Mb .mp4)*

- **Update on the AOMSUC-11 Training Event** (Mr Bodo Zeschke Australian Bureau of Meteorology Training Centre) 4 minutes duration (9Mb .mp4)

Australian Government
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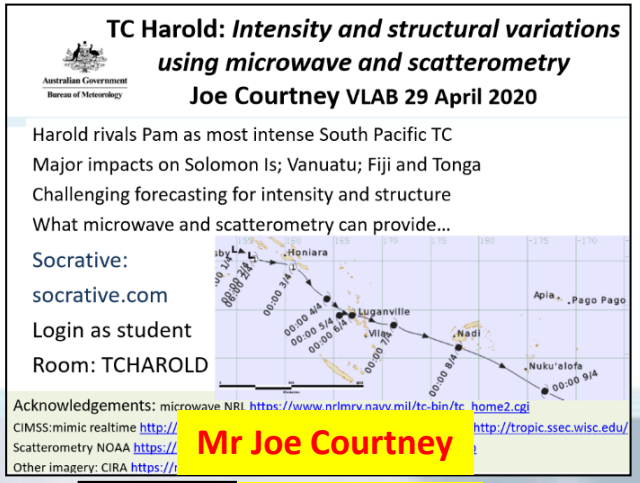
# Tropical Cyclone analysis and forecasting

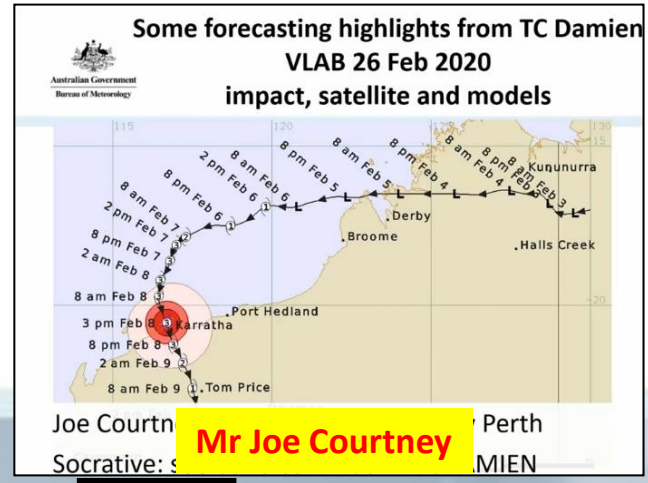

Mr Joe Courtney

December 2020



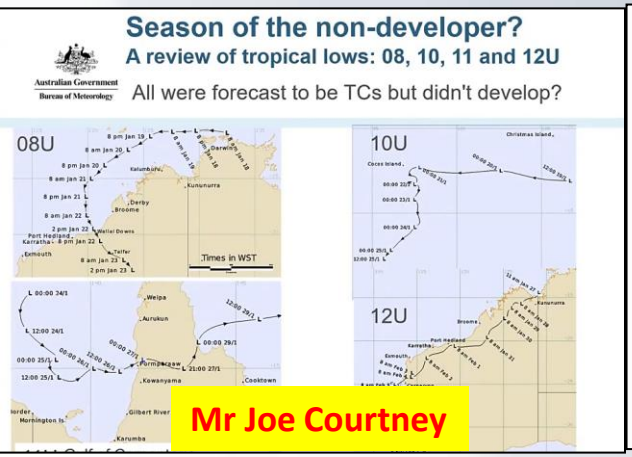

Mr Joe Courtney

April 2020




Mr Joe Courtney

February 2020

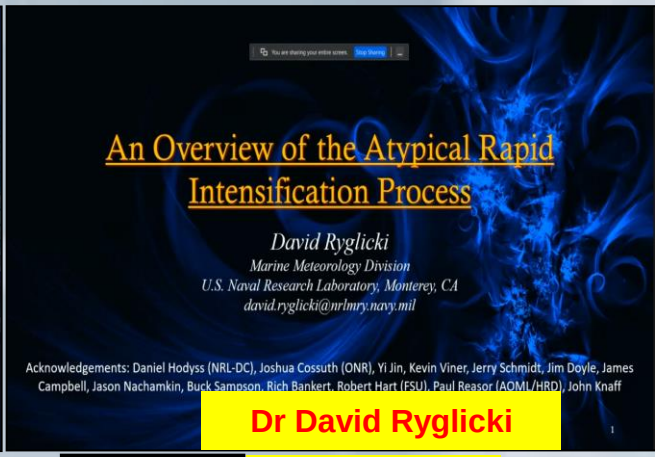



Mr Joe Courtney

February 2021


Mr Jun Park

August 2020




Dr David Ryglicki

May 2021

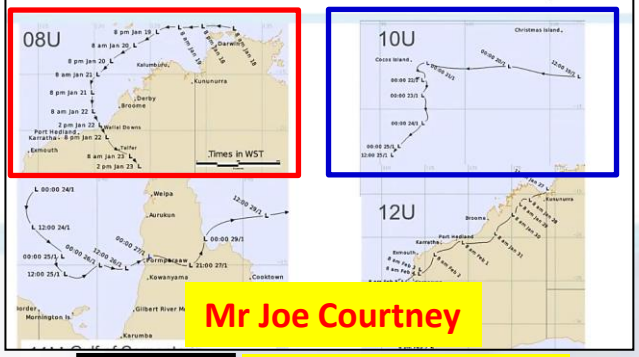
# Tropical Cyclone analysis and forecasting

## Season of the non-developer?

**A review of tropical lows: 08, 10, 11 and 12U**

Australian Government Bureau of Meteorology

All were forecast to be TCs but didn't develop?



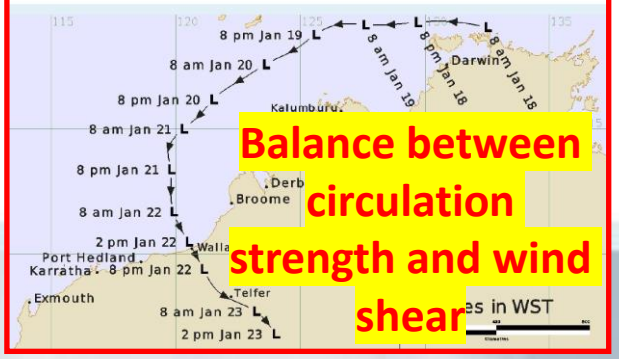

Mr Joe Courtney

February 2021

## 08U

**08U 18-23 Jan 2021**

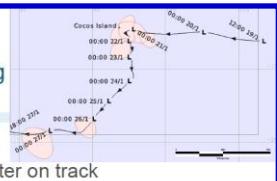
Standard Pilbara recurver BUT a non-developer!




Balance between circulation strength and wind shear

## 10U

10U summary: timing is everything



SST: OK 28C initially then ~27C later on track

Deep moisture: OK initially then moderated from 25 Jan

Upper-level outflow: on western side, then southern side from 24

Circulation: improved on 21-23 Jan then weakened on 24 Jan

Low Vertical Wind Shear: No but eventually low from 26 Jan

Ingredients

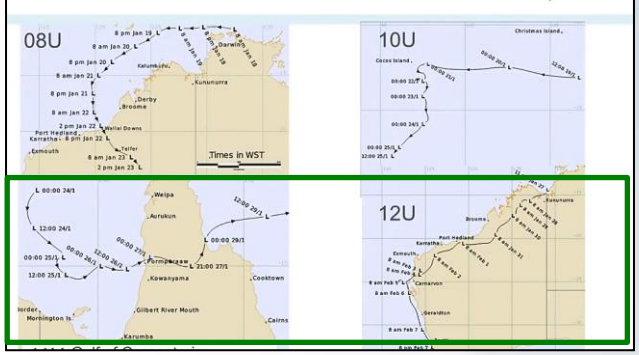
Ingredients not quite right at the same time

## Season of the non-developer?

**A review of tropical lows: 08, 10, 11 and 12U**

Australian Government Bureau of Meteorology

All were forecast to be TCs but didn't develop?

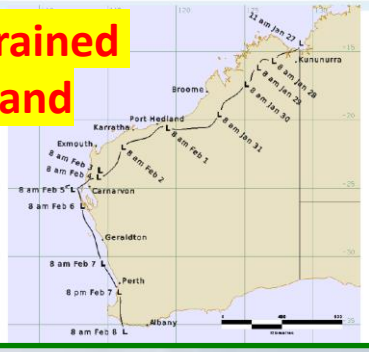



## 12U

**12U 27 Jan – 9 Feb 2021**

Over land coastal hugger all rain and not much wind

Constrained by land




## Summary: mostly good but for land!

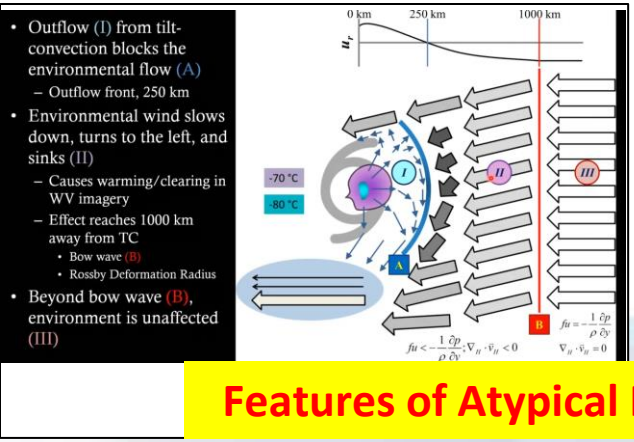
Coincidence that in a short period of time four circulations developed but did not reach TC intensity!

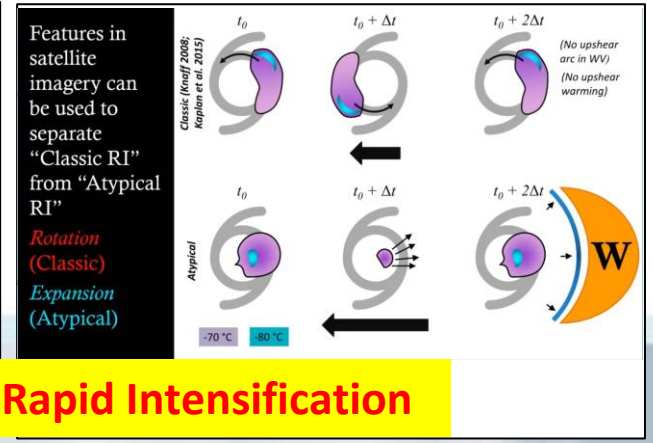
11U and 12U constrained by land

08U: balanced between circulation strength and wind shear

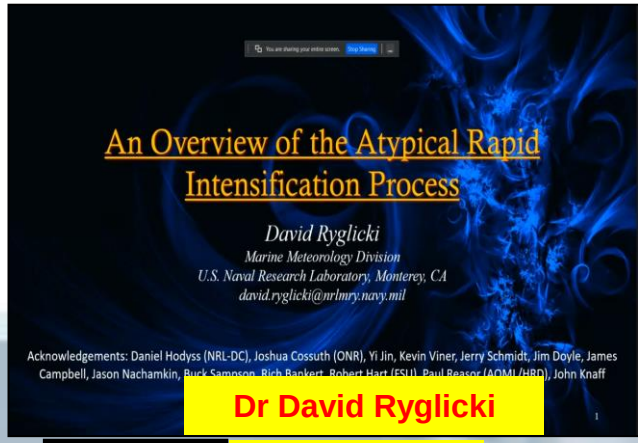
Lessons learned: following process and acting on best information at the time

# Tropical Cyclone analysis and forecasting



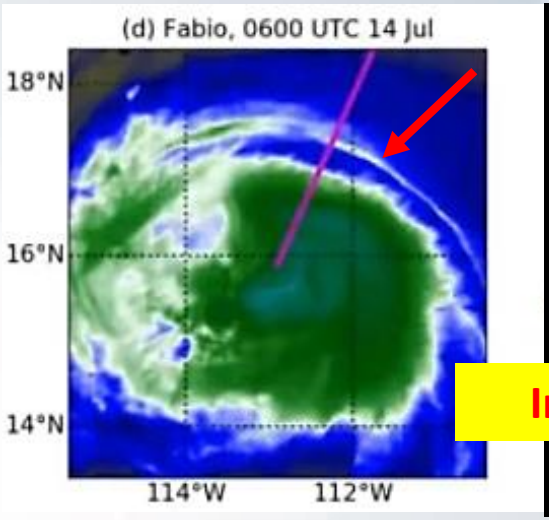




**Features of Atypical Rapid Intensification**



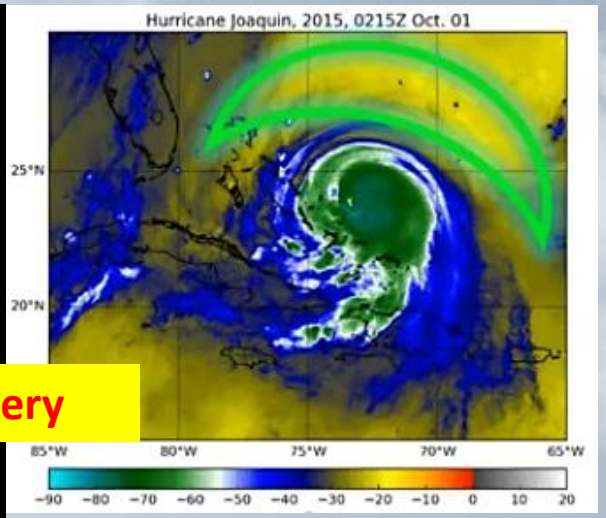

**Dr David Ryglicki**

**May 2021**




## Water Vapor Imagery

- Two primary components
  - Slow-moving upshear arcs
  - Warming beyond arcs
- Arcs propagate at approximately 8 m $s^{-1}$
- Warming is a near-




**In Water Vapour imagery**

Australian Government
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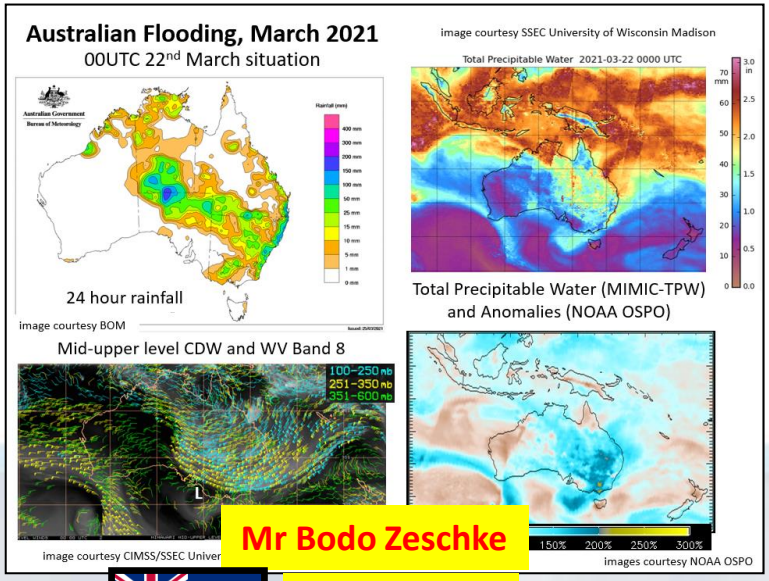
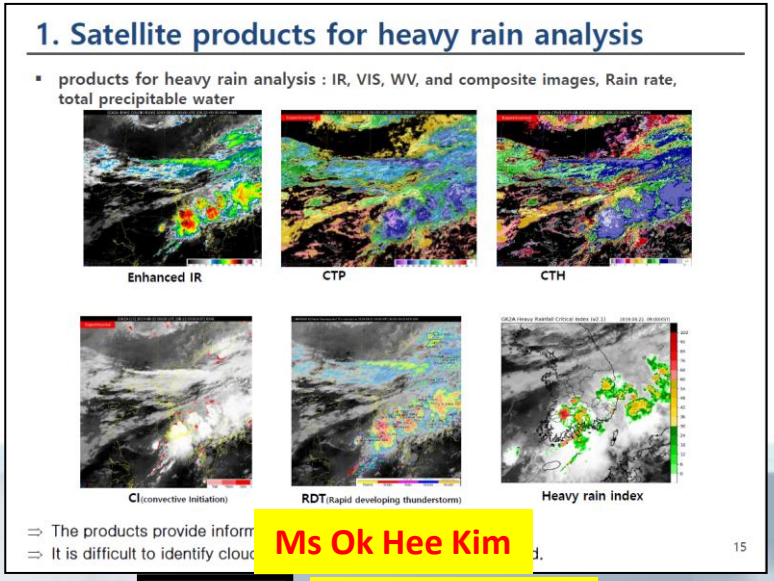
# Heavy precipitation and flooding resources



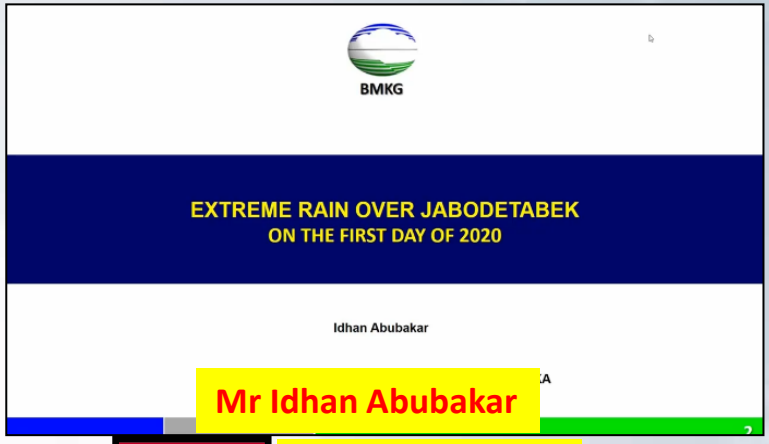

Mr Bodo Zeschke

March 2021




Ms Ok Hee Kim

August 2021

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January 2020


Mr William Straka III

November 2020

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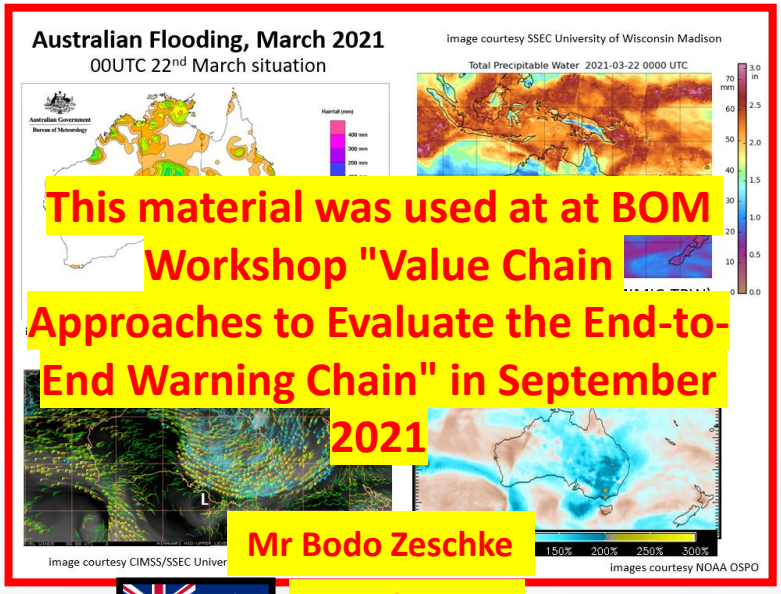


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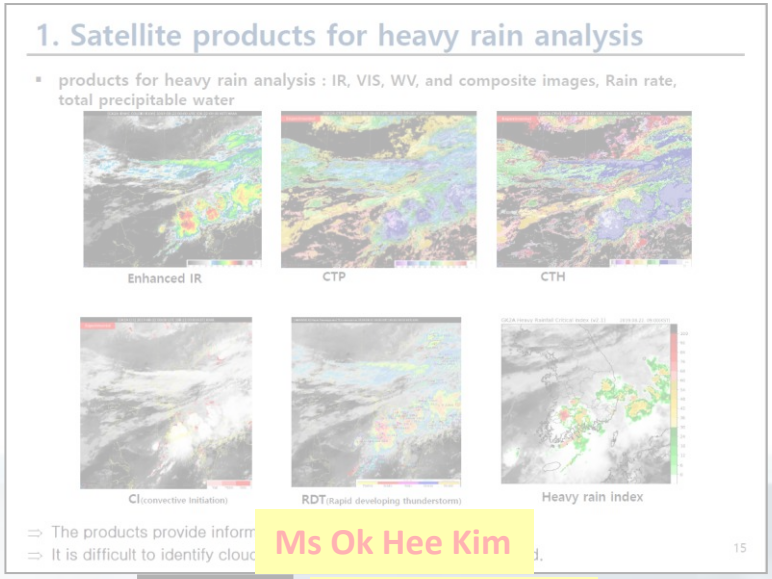
March 2021

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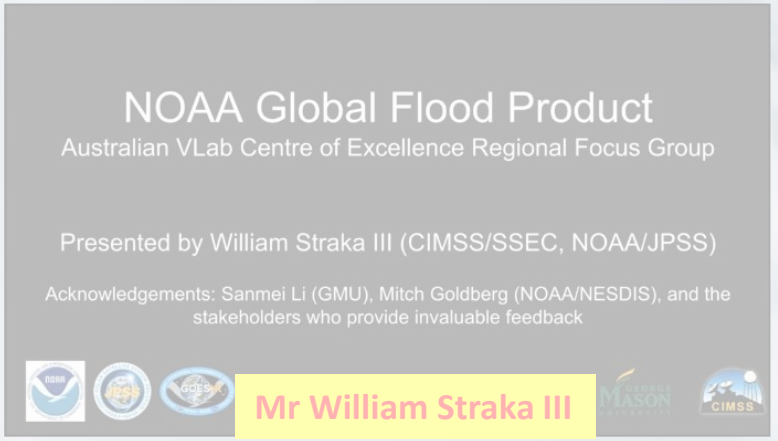


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November 2020

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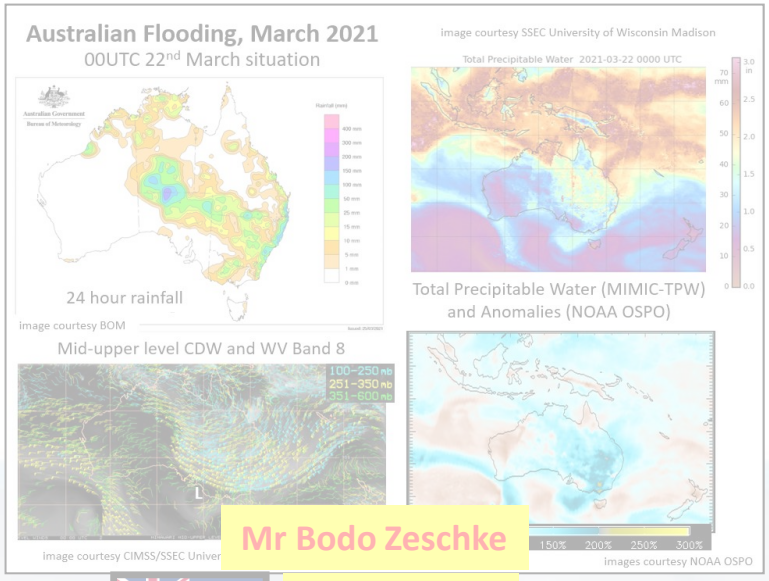
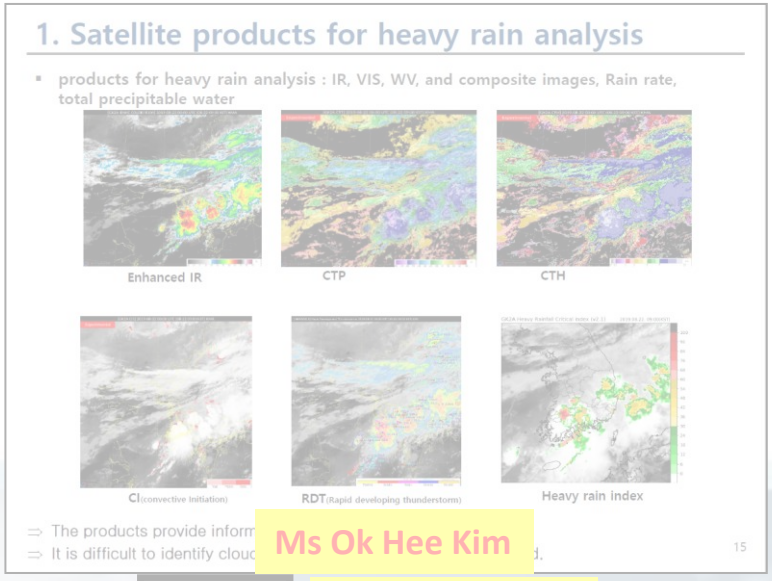


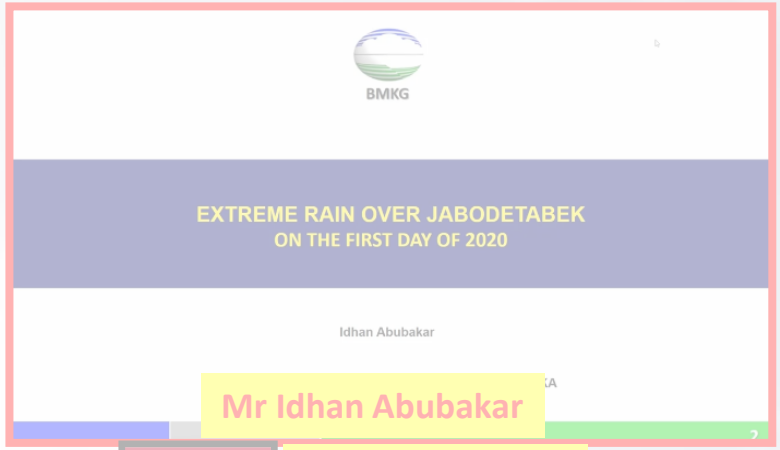

Mr Bodo Zeschke

March 2021




Ms Ok Hee Kim

August 2021




Mr Idhan Abubakar

January 2020

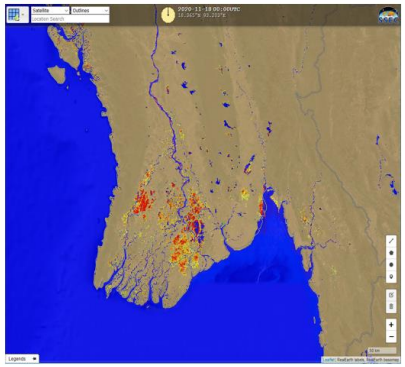

Mr William Straka III

November 2020

# Some case studies using the NOAA Global Flood Product

**Areas showing a flooding signal over Myanmar, 18th November 2020 and explanation by William Straka**

from https://floods.ssec.wisc.edu/?products=RIVER-FLD-joint-AHI.75&center=10,120&zoom=4&basemap=satellite&labels=-&timestep=1d



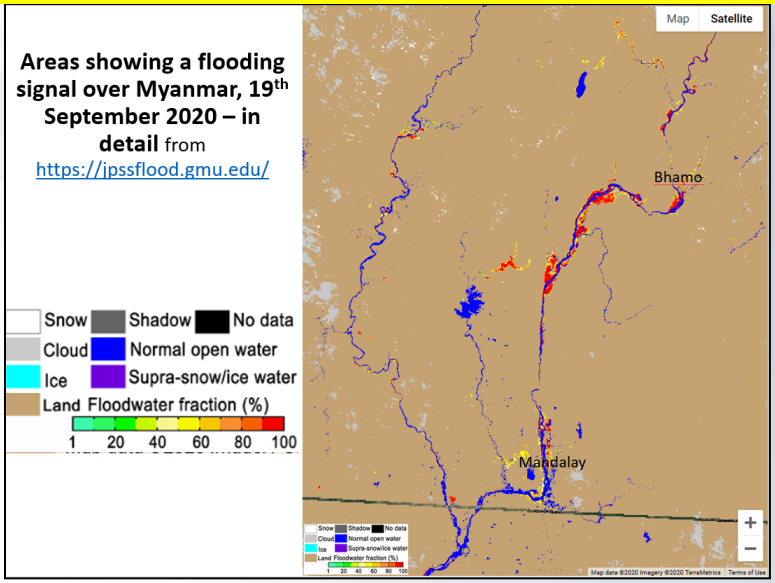
**William Straka comment:** In the case of Myanmar, those are marshlands, which is an area mentioned in the "Potential Issues" slide.

From the "Potential Issues" slide

Agricultural-related flooding: some flooding water shown in the VIIRS flood maps may not be any hazard-related flooding, but from agriculture-related activities such as rice paddy planting and aquaculture

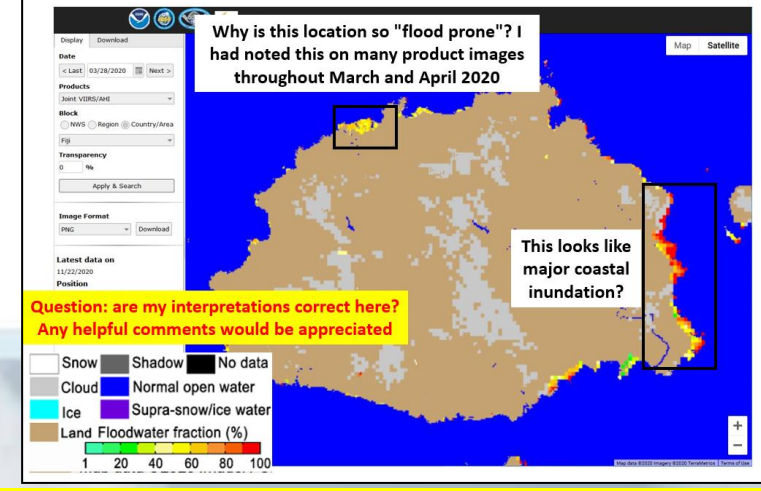
**Forwarded to Myanmar contacts, Nov 2020**

**Areas showing a flooding signal over Myanmar, 19th September 2020 – in detail** from https://jpssflood.gmu.edu/




**Fiji flooding, 28th March,** joint VIIRS/AHI data

Image extracted from the archive at https://jpssflood.gmu.edu/




**Fiji case study discussed with William Straka III**

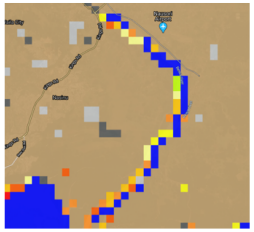
**Fiji flooding, 9th April**

joint VIIRS/AHI data

**William Straka response**


Cyclone Harold was in early April. On 9 April there was minor flooding along the Rewa River

Information from the ground, as passed along from the United Nations confirmed this minor flooding that was occurring. In addition per the UN utilizing very high resolution imagery, they further confirmed only minor flooding on the southern parts of the island and very limited. This further confirmed the flooding seen by VIIRS



images courtesy

Australian Government
Bureau of Meteorology

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1. Highlights of the Australian VLab Centre of Excellence Regional Focus Group meetings 2020-21: Celebrating achievements
2. Presenters from the AOMSUC-11 host nation and other countries.
3. **New resources available at the Australian VLab Centre of Excellence Regional Focus Group meeting archive:**
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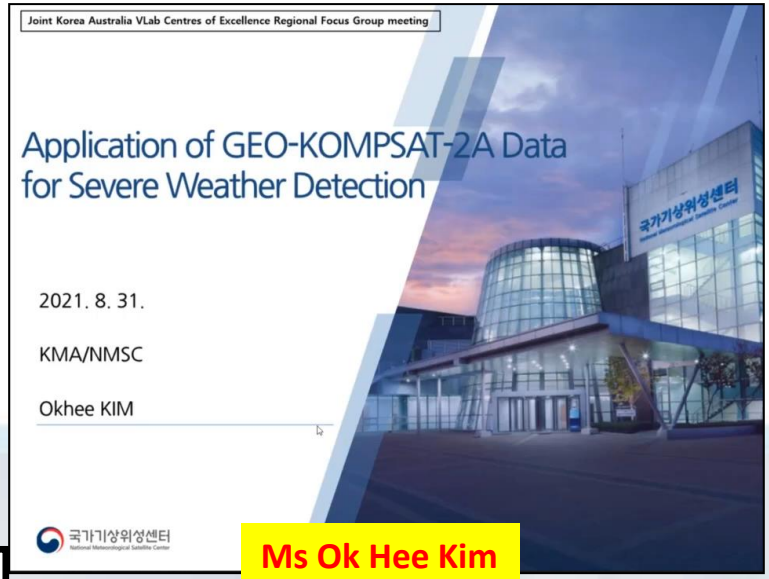
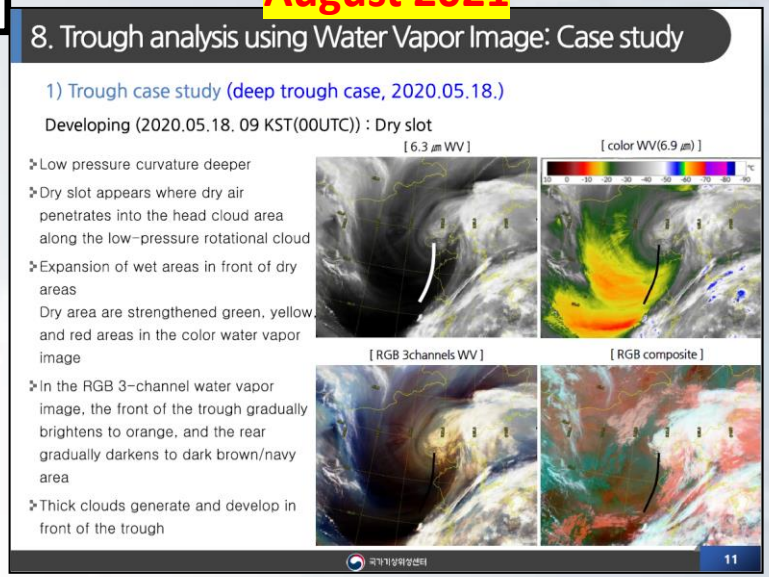
   - **Other severe weather case studies**
   - Satellite viewing platforms
   - Remote delivery of training and assessment

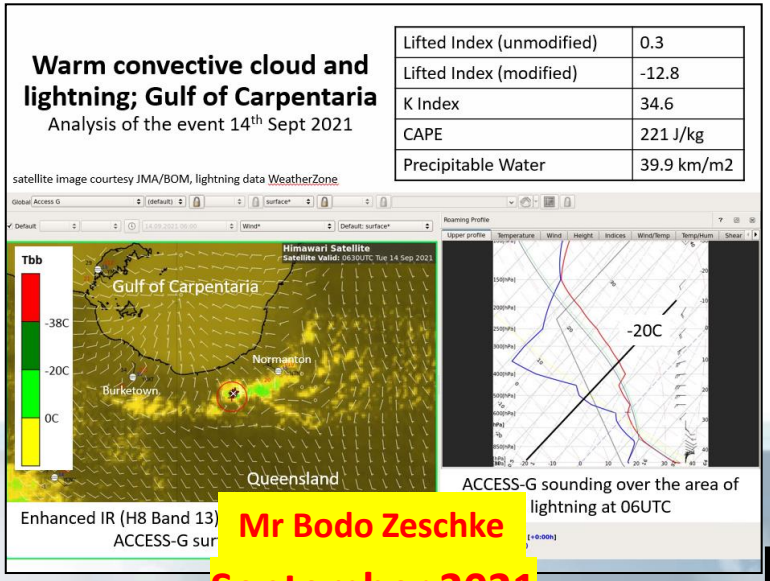
# Other Severe Weather case studies




**Ms Ok Hee Kim**

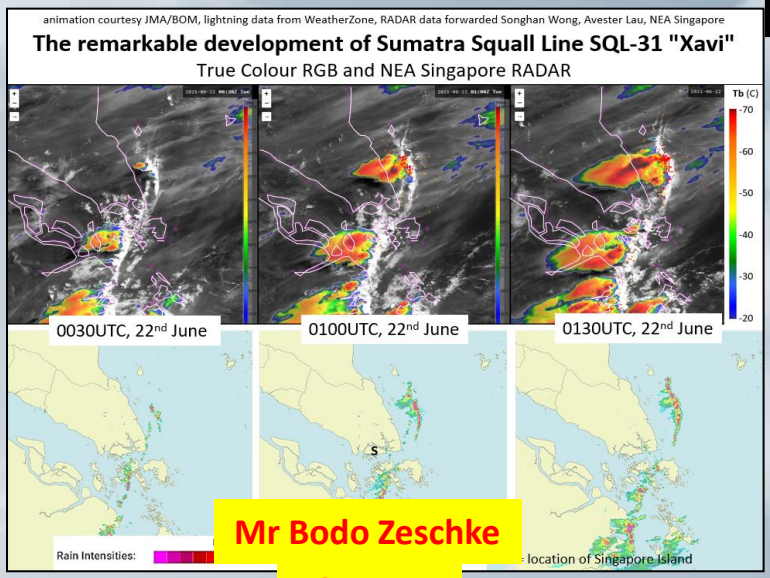
**August 2021**




**Mr Bodo Zeschke**

**September 2021**




**Mr Bodo Zeschke**

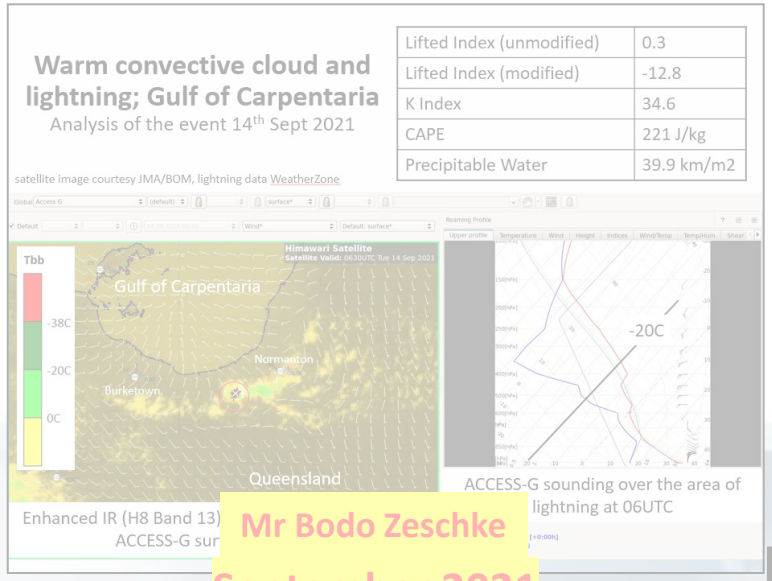
**July 2021**

# Other Severe Weather case studies


Ms Ok Hee Kim

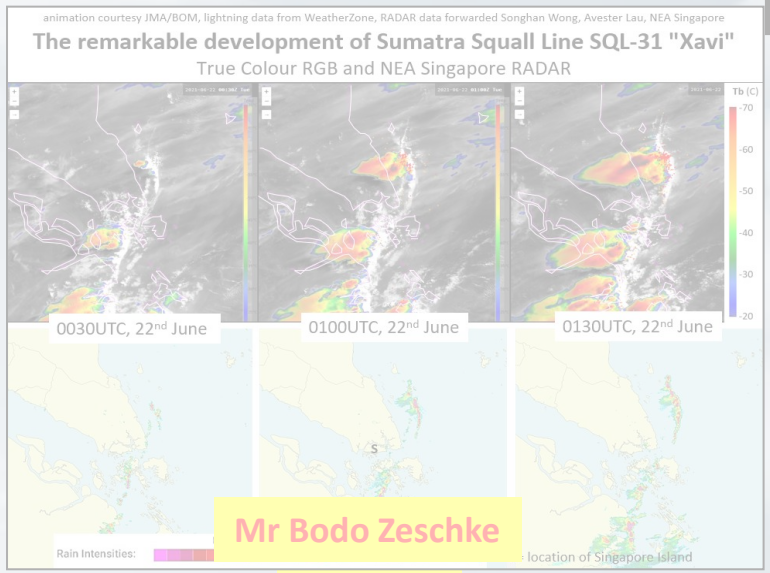
August 2021

Water vapour imagery analysis techniques




Mr Bodo Zeschke

September 2021



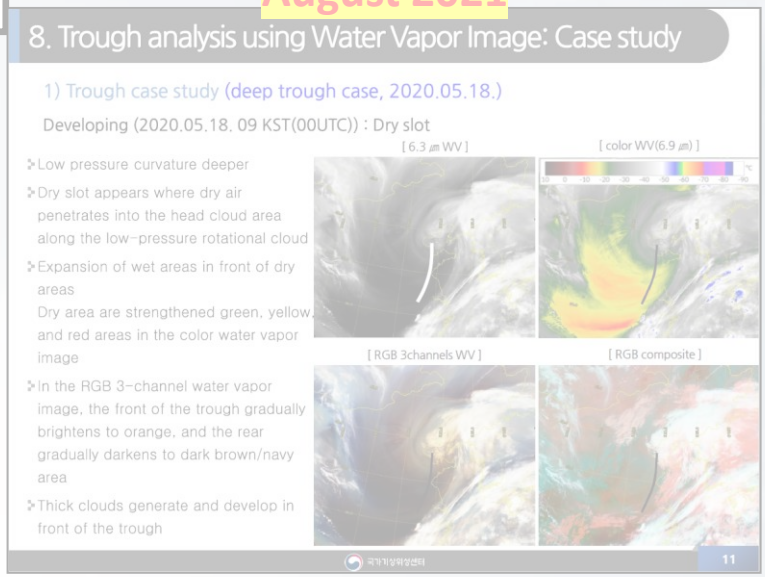

Mr Bodo Zeschke

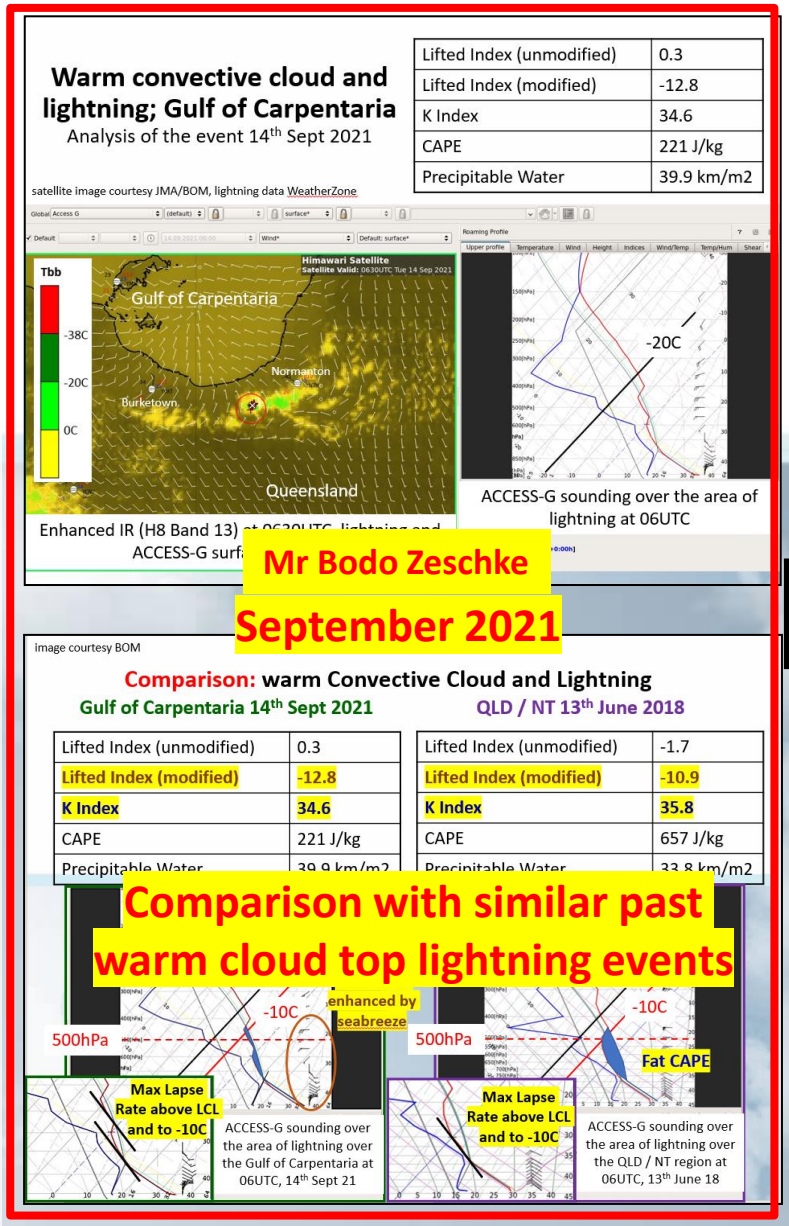
July 2021

# Other Severe Weather case studies


Ms Ok Hee Kim

August 2021



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Bureau of Meteorology

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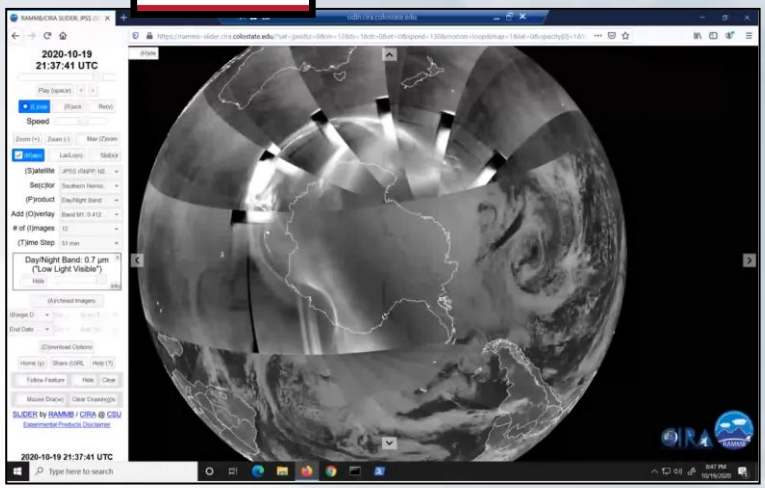
# Demonstrating satellite data viewing platforms

## RAMMB/CIRA SLIDER


Dr Curtis Seaman

October 2020

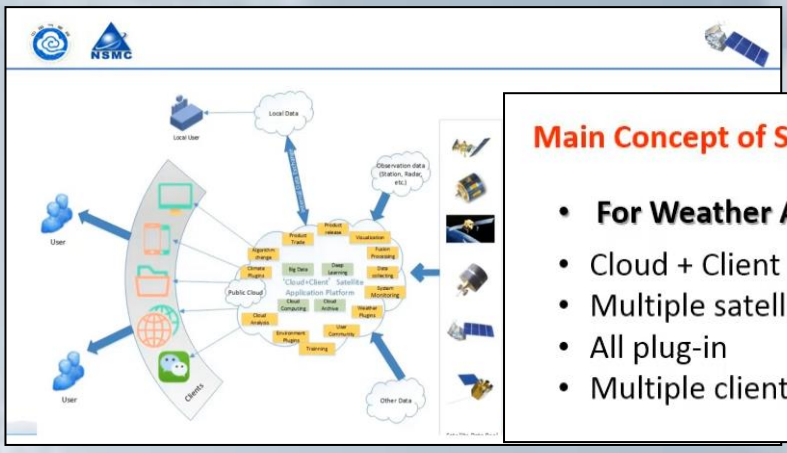



https://rammb-slider.cira.colostate.edu/

## SWAP 2.0 Platform


Mr Di Xian

July 2020

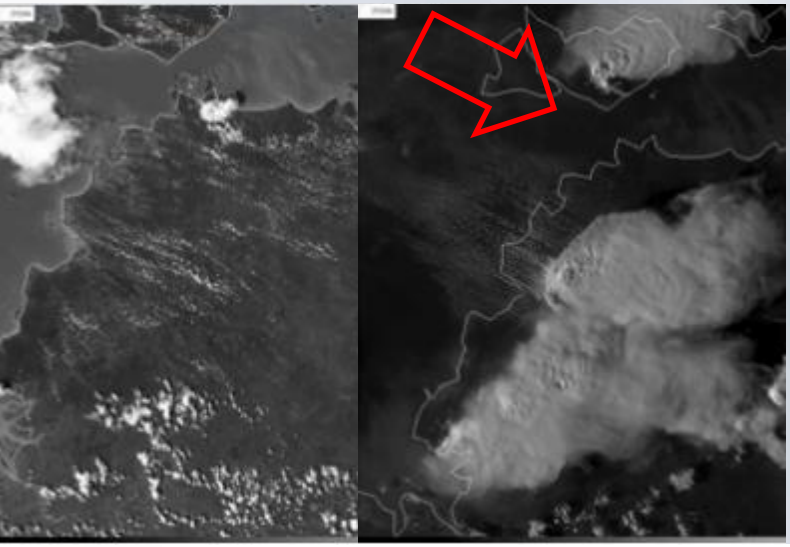



rsapp.nsmc.org.cn/geofy/

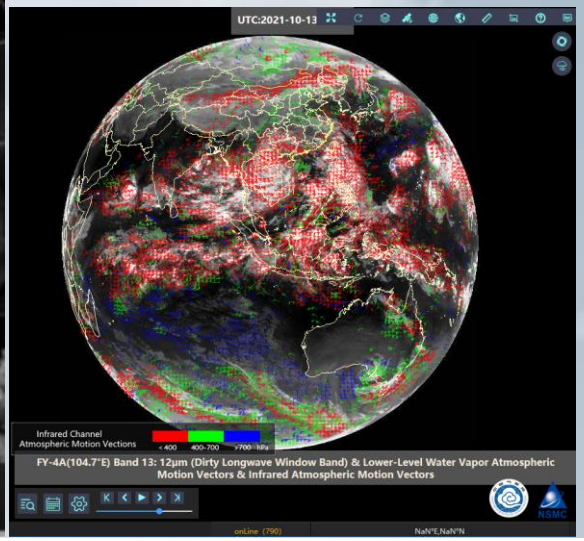
# Demonstrating satellite data viewing platforms

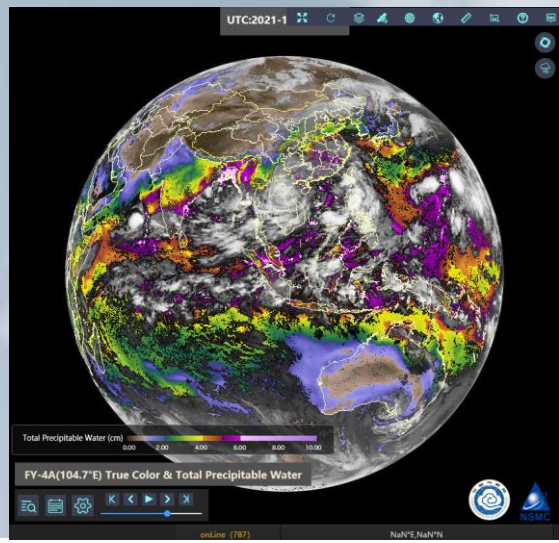

Himawari-8 satellite


FY-4A satellite



Storm relative motion




Various displays (AMV's, total precipitable water)

Australian Government
Bureau of Meteorology

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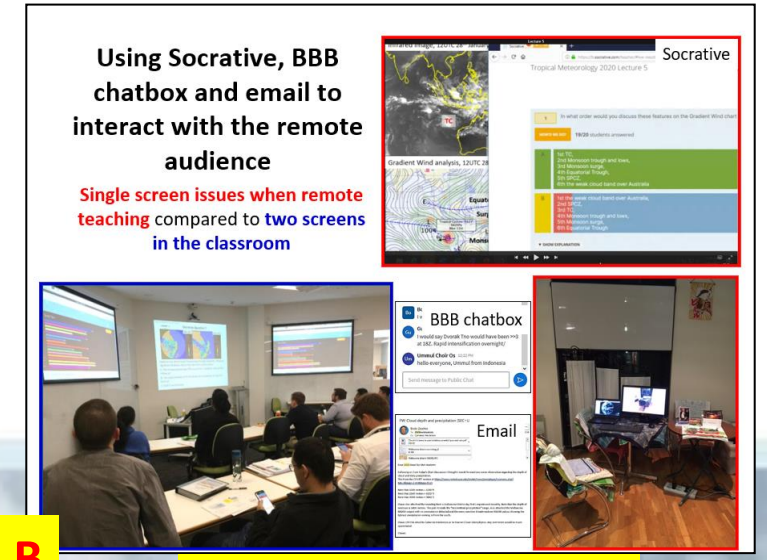
# Useful information about Remote Delivery of Training

A. Comparing different remote conferencing software

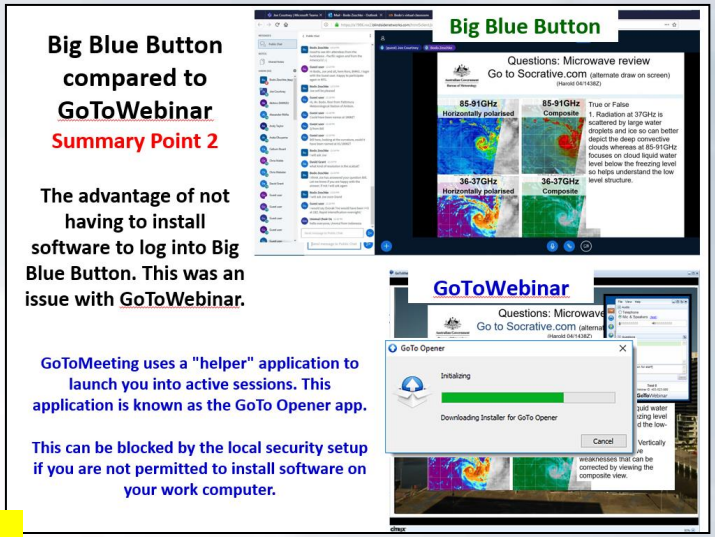
B. Remote classroom interactions during COVID "working from home" restrictions

C. Remote classroom interactions during assessment



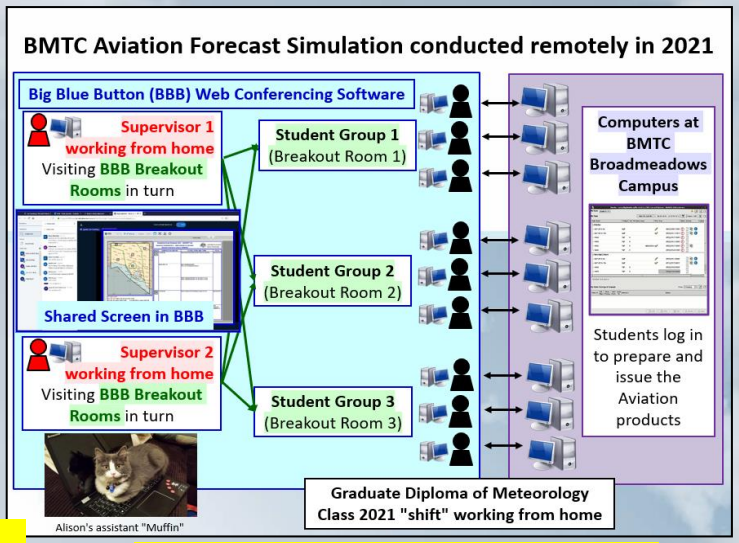

B

July 2020 Mr Bodo Zeschke




A

June 2020 Mr Bodo Zeschke




C

August 2021 Mr Bodo Zeschke

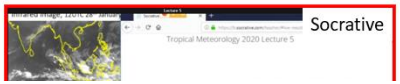
# Useful information about Remote Delivery of Training

A. Comparing different remote conferencing software

B. Remote classroom interactions during COVID "working from home" restrictions

C. Remote classroom interactions during assessment

Using Socrative, BBB chatbox and email to

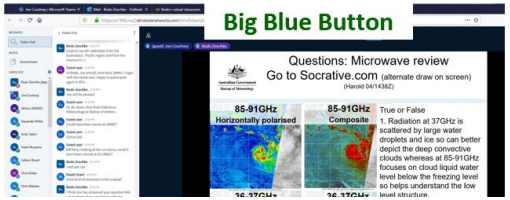



**Interacting with the remote audience using Big Blue Button, Socrative cloud based learner response system (I have developed an 'easy to get a free account' / 'easy to use' Socrative Guide)**

**B**

Big Blue Button compared to GoToWebinar

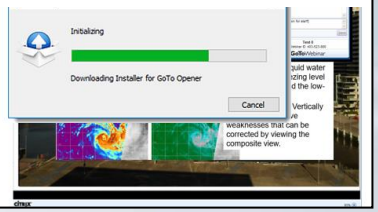
Summary Point 2




**Comparing the Big Blue Button with the GoToWebinar remote conferencing software**

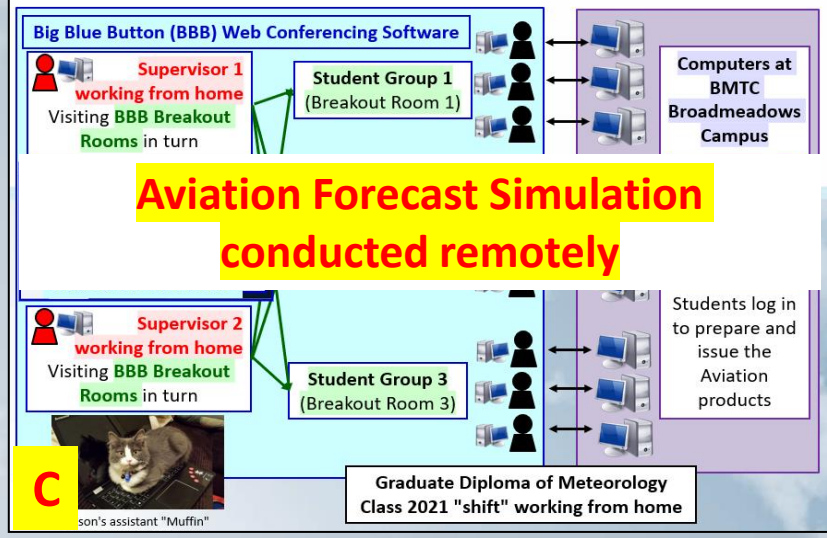
GoToMeeting uses a "helper" application to launch you into active sessions. This application is known as the GoTo Opener app.

This can be blocked by the local security setup u are not permitted to install software on your work computer.




**A**

BMTC Aviation Forecast Simulation conducted remotely in 2021




**C**

# Summary of the Regional Focus Group meeting, 29th October 2021

- **Summary of the recent achievements of the environment disaster and agriculture monitoring using FengYun satellites.** Mr Gao Hao , Division of Remote Sensing Data Application, National Satellite Meteorological Center, China Meteorological Administration

- **Celebrating 8 years of the Australian VLab Centre of Excellence Regional Focus Group meetings, with a summary of the past two years.** Mr Bodo Zeschke, Bureau of Meteorology Training Centre.

**The next Regional Focus Group meeting is scheduled to be held during November 2021**