

# Toyama University of International Studies ( TUINS )



**Shiro Ochi**



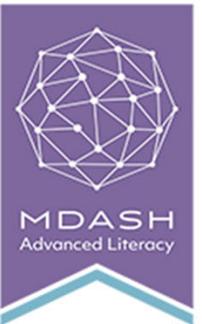


# Data Science Program at TUNIS



**MDASH Literacy** 数理・データサイエンス・AI  
教育プログラム認定制度  
リテラシーレベル

Approved Program for Mathematics,  
Data science and AI Smart Higher Education



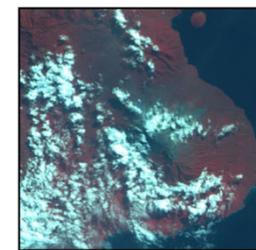
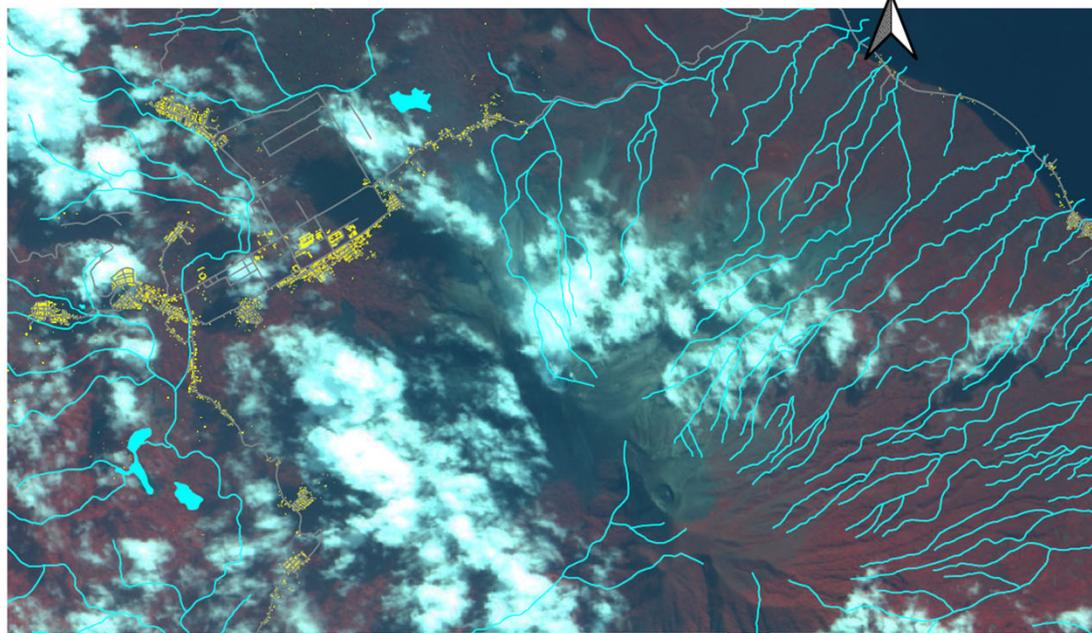
**MDASH Advanced Literacy** 数理・データサイエンス・AI  
教育プログラム認定制度  
応用基礎レベル

Approved Program for Mathematics,  
Data science and AI Smart Higher Education,  
designated by the Gov of Japan



# TUINS joined DAN/SA in Sep. 2024 (VAP:SA\_00585, Jun. 2025)

THEOS Multi-Spectral Image on 23 June, 2025 & GIS(osm)  
(SA\_00585)



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(Toyama Univ. of Int. Studies)

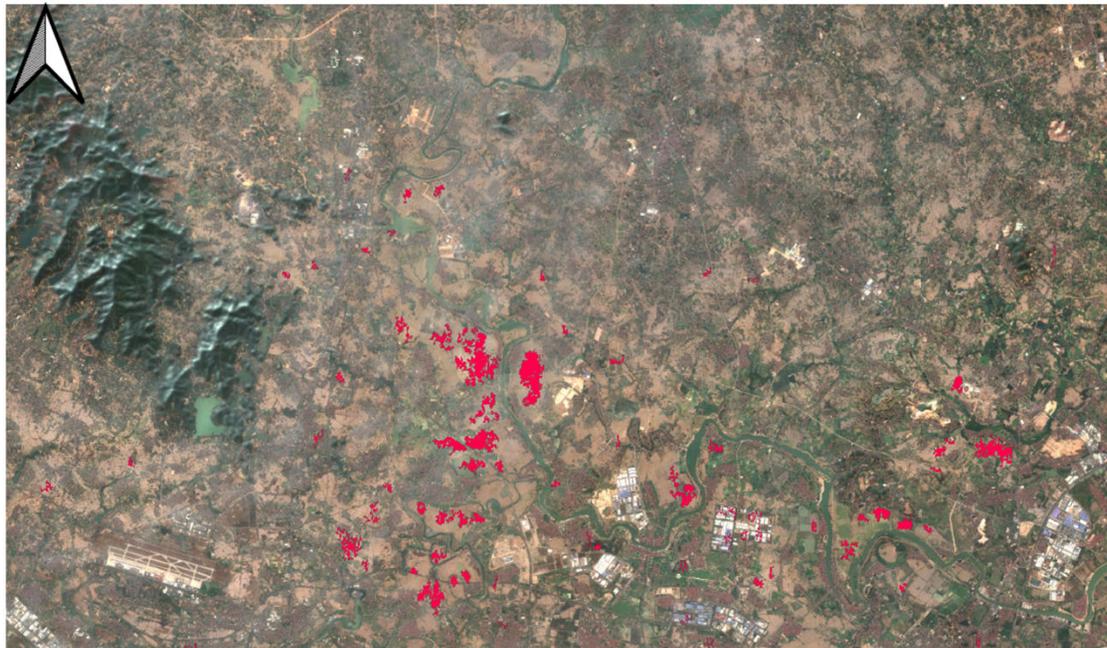
Disclaimer:  
The accuracy of this product is  
not validated.

0 1 2 km



# (VAP:SA\_00586, Jun. 2025)

A Preliminary Result of Change Detection  
Using ALOS-2\_HH Images



0 2.5 5 km



Satellite Images:

Background  
Sentinel2\_TCI:  
2025\_January\_17

Pre-Event  
ALOS2\_HH: 2025\_June\_11

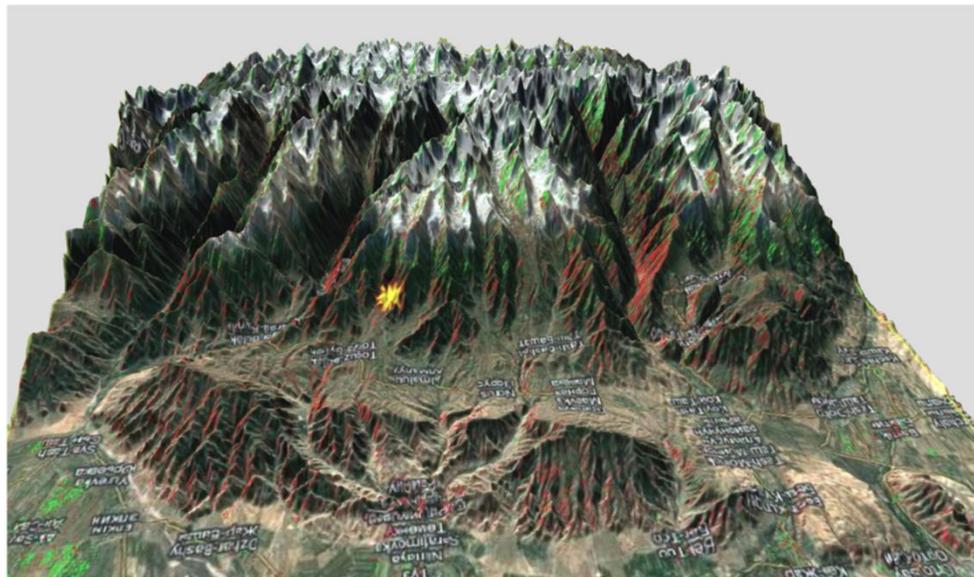
Post-Event  
ALOS2\_HH: 2025\_June\_25

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(Toyama Univ. of International Studies)

Disclaimer:  
The accuracy of this product is not  
validated.  
The changes may be underestimated.

# (VAP:SA\_00587, Jun. 2025)

A Preliminary Result of Change Detection  
3D View  
Using ALOS-2 HH Images and AW3D30(DEM)  
(SA\_00587)



Background  
Google Satellite Hybrid

Pre-Event:ALOS2\_HH  
2022\_April\_27  
Post-Event:ALOS2\_HH  
2025\_July\_2

-  center
- b\_a\_reclass\_11000
- Band 1 (Gray)
-  0
-  Positive Change
-  Negative Change

Positive Change:  
Pixel digital value increased  
between Pre and Post imaes.

Negative Change:  
Pixel digital value decreased  
between Pre and Post imaes.

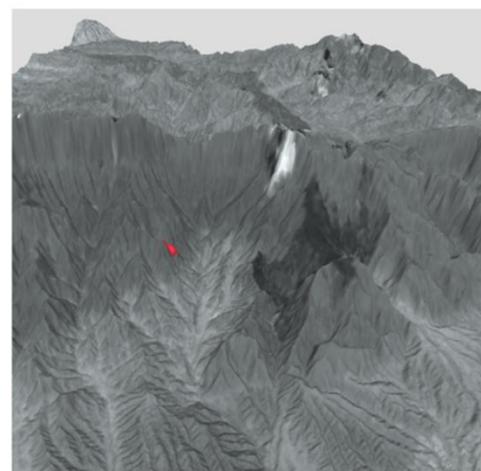
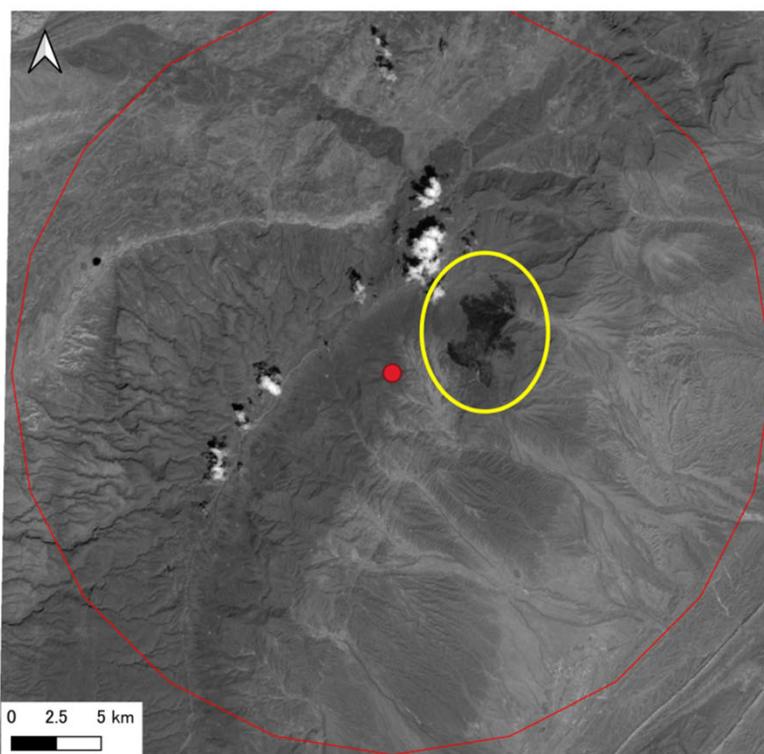
Produced by TUINS  
(Toyama Univ. of Int. Studies)

Disclaimer: The accuracy of  
this product is not validated.



# (VAP:SA\_00598, Jul. 2025)

A Preliminary Result for Forest Fire Detection using IRS-R2A Band-4 Image  
(20250723-Uzbekistan-Forest-Fire-00598)



Satellite Images:  
IRS-R2A/AW Band-4 (Res.56m), 2025\_July\_29

DSM: Copernicus Global Digital Elevation Model(30m)

Produced by TUINS (Toyama Univ. of Int. Studies)

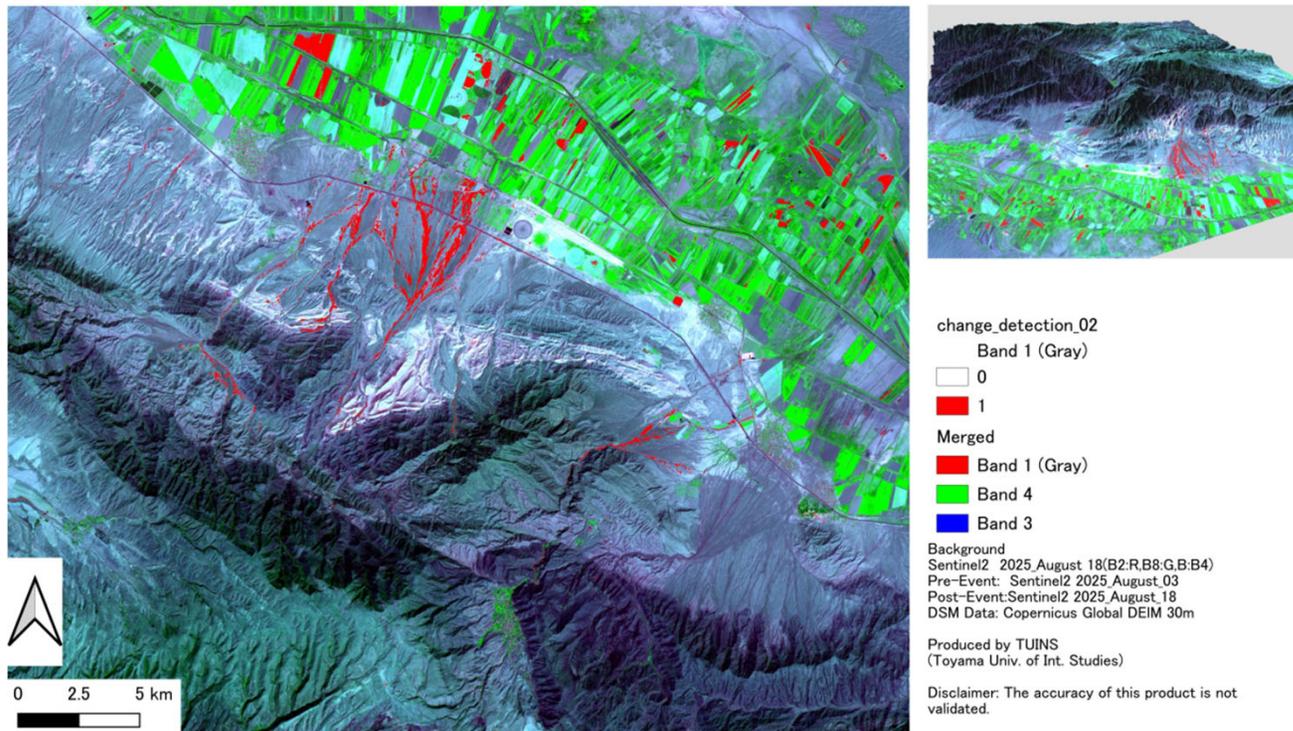
Disclaimer: The accuracy of this product is not validated.

3D view URL: <https://skfb.ly/pzHvY>



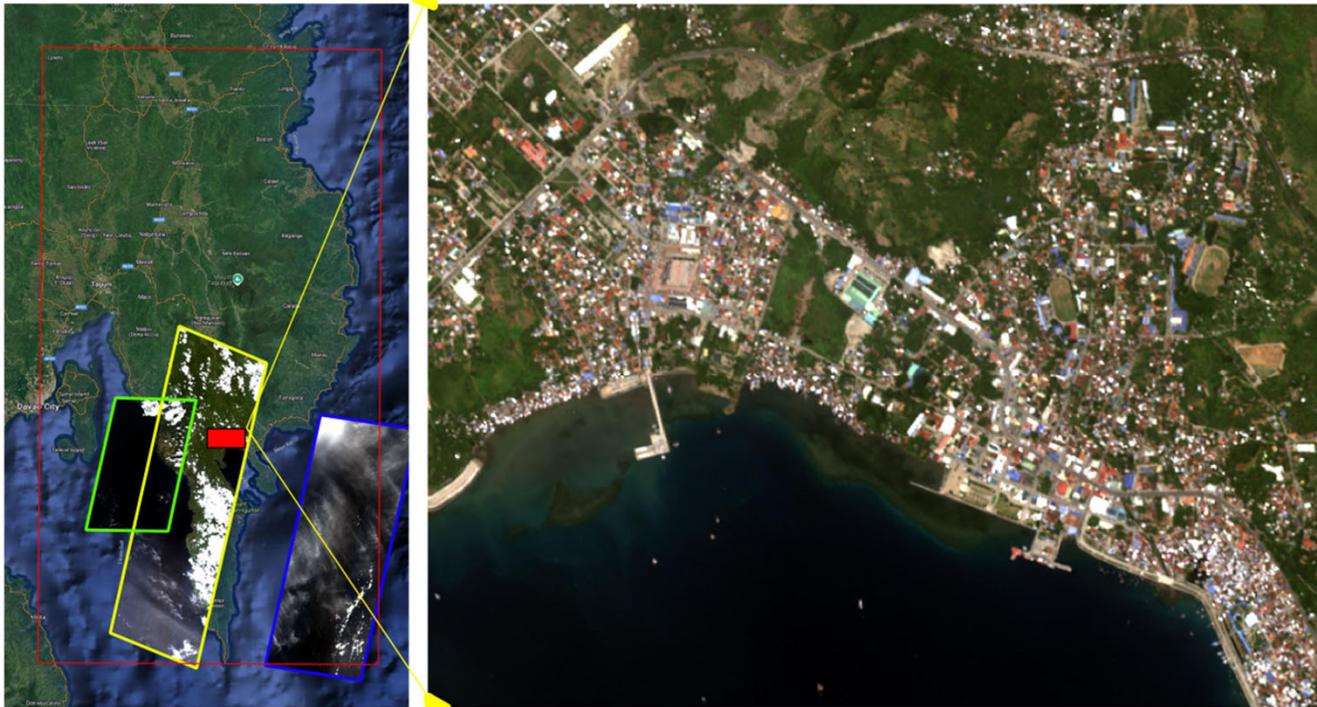
# (VAP:SA\_00602, Aug. 2025)

【SA\_00602】A Preliminary Result of Change Detection  
Using Sentinel-2 Images  
Mudflow in Nokhur Village, Turkmenistan on 11 August, 2025



# (VAP:SA\_00619, Oct. 2025)

【SA\_00619】 Overview of KazEOSat-1 Images for Philippines-Landslide-Earthquake-Tsunami

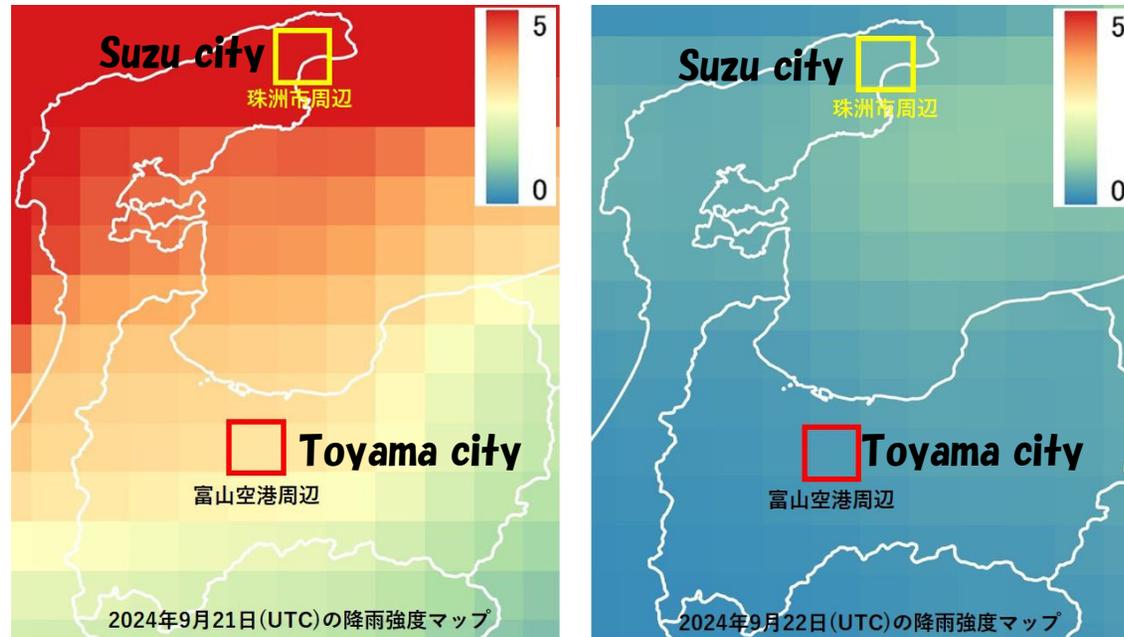


【LEFT】  
(Green) KazEOSat-1(L2) MS(4m res.) image on October,14.  
(Yellow) KazEOSat-1(L2) MS(4m res.) image on October,19.  
(Blue) KazEOSat-1(L2) MS(4m res.) image on October,23.

【RIGHT】  
Natural Color Image(B:Band1, G:Band2, R:Band3) of a part of Davao City using  
KazEOSat-1(L2) MS(4m res.) image on October,19.

# Research & Development using GSMaP

## Torrential Rainfall Probability and Risk Assessment



GSMaP · Sep.21, 2024.

GSMaP · Sep.22, 2024.

- Torrential Rainfall on Sep.21, 2024
- Suzu City : 215mm/day
- Toyama City : 70mm/day

# Torrential rainfall events probability

Hourly Precipitation

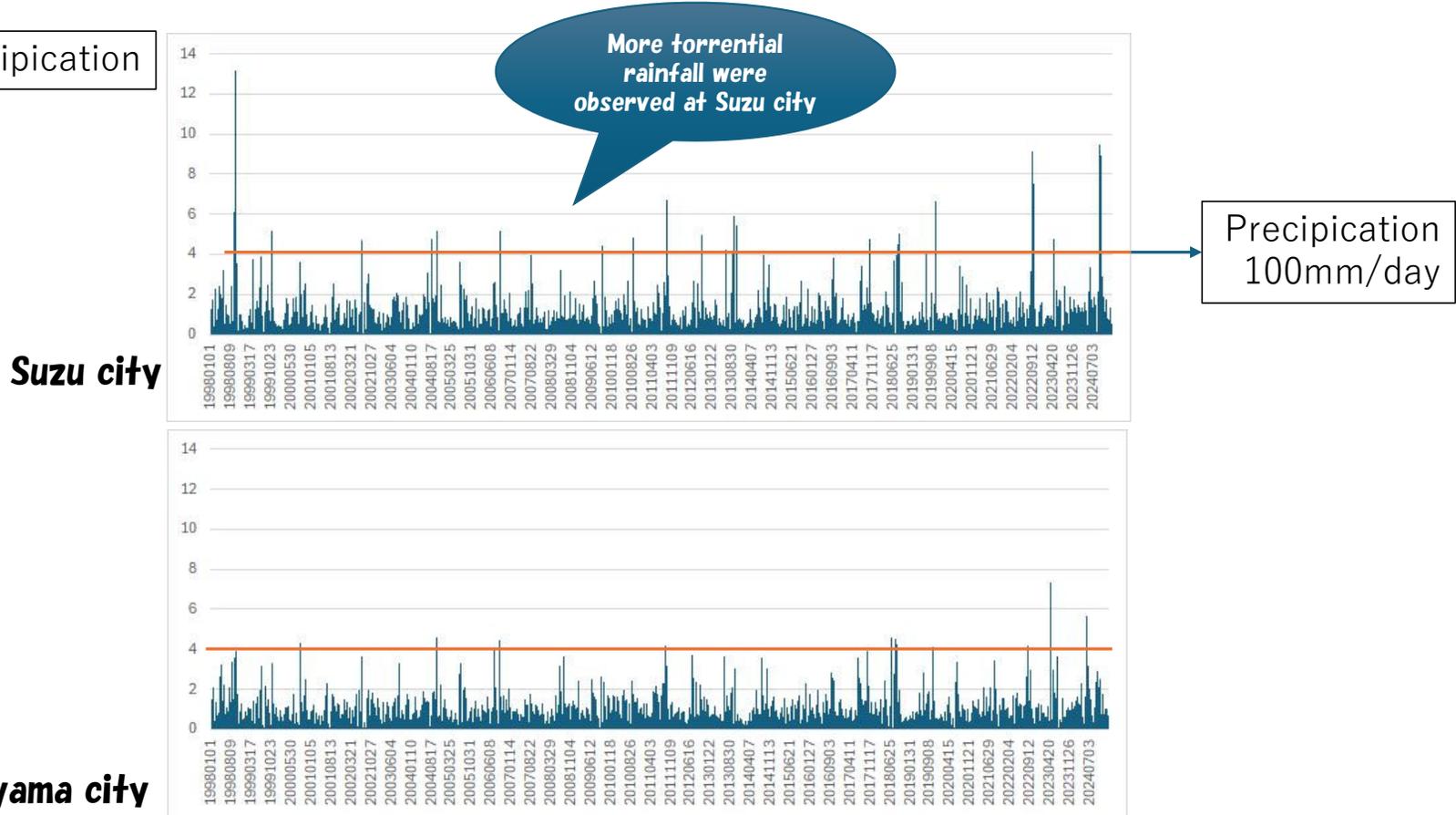
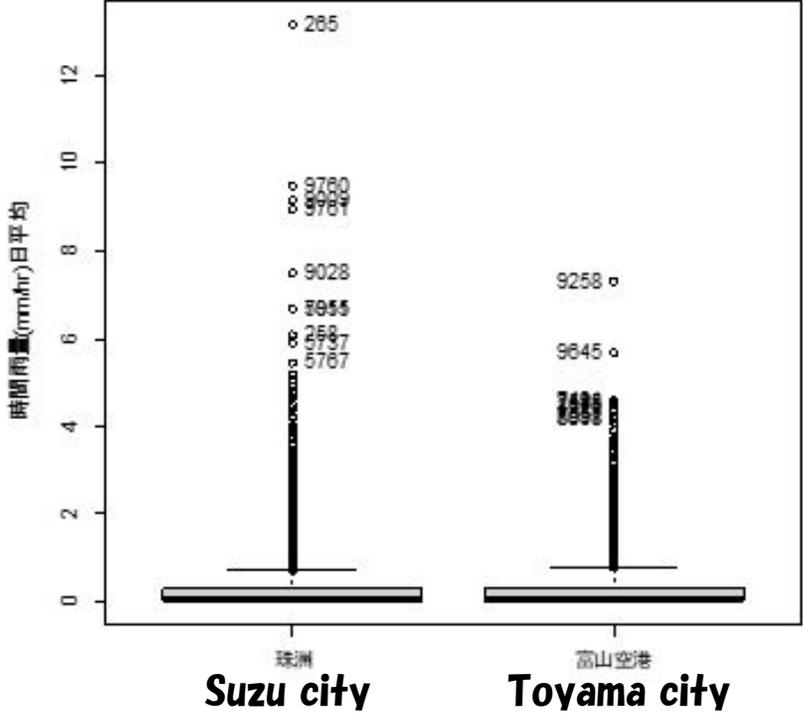


図5. 時間降水量(mm/hr)日平均値(27年間)

# Torrential rainfall events probability



**exceptionally heavy rainfall  
based on GSMaP for 20 yers**

# Research & Development



**Thank you  
very much!**

