



Development of Satellite Precipitation in Asia-Pacific Region for Rainfall-Runoff Analysis

using CNN with Meteorological Satellite Himawari

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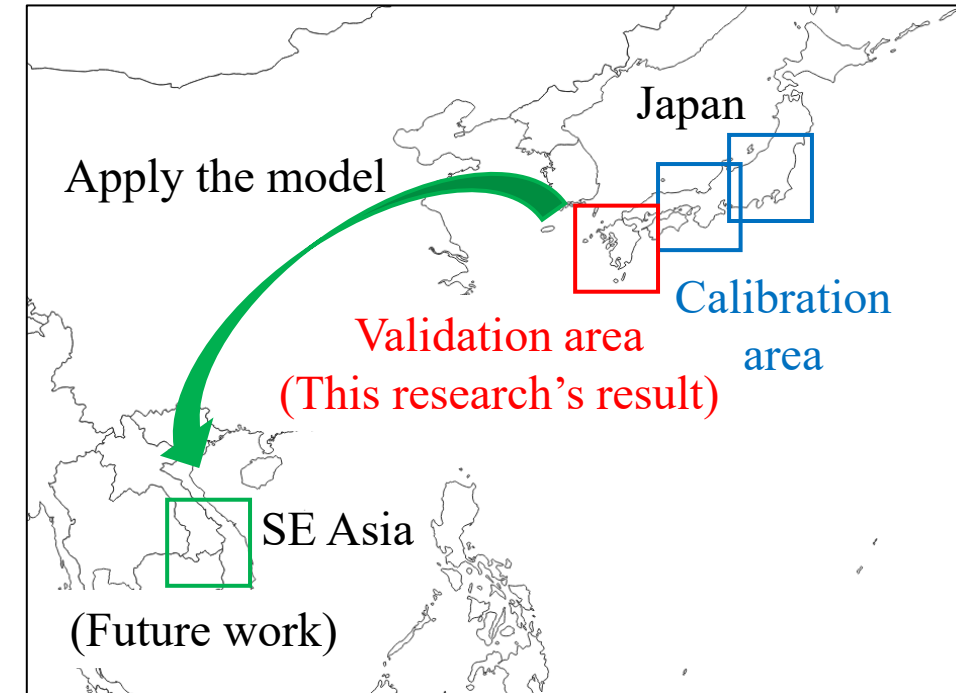
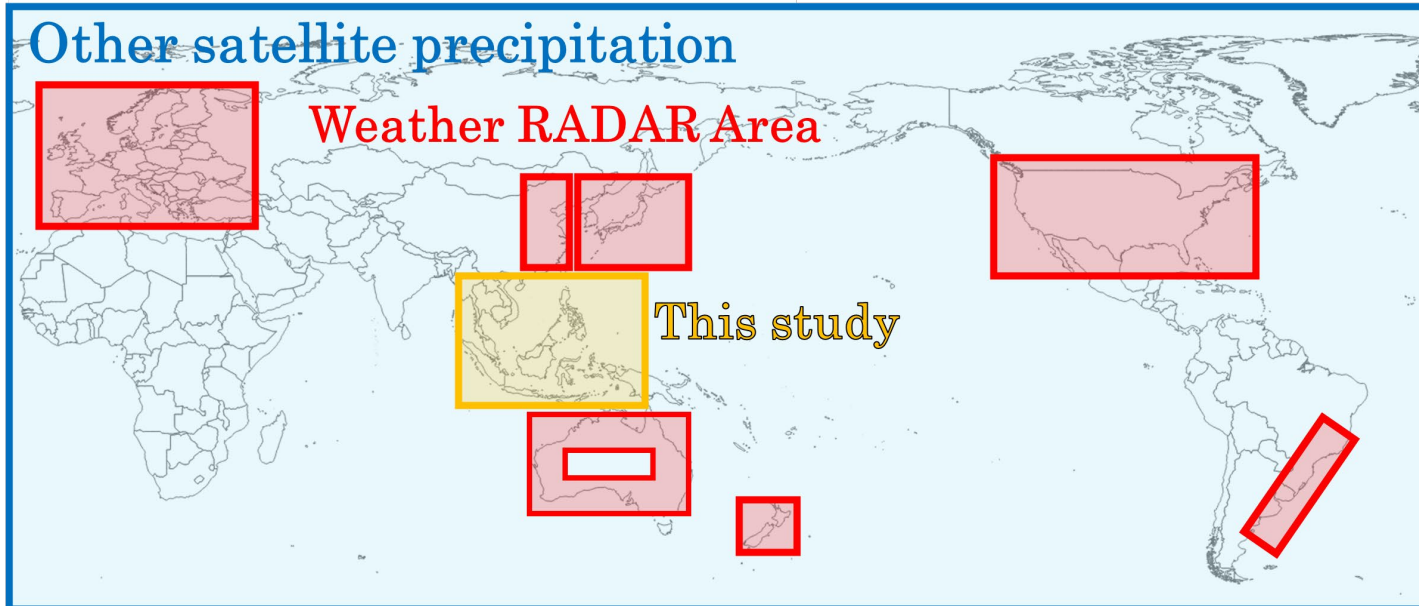


Purpose

To create **more quantitative** rainfall data, we are **focusing on Southeast Asia** instead of the entire globe, aiming to develop rainfall data that can be used for rainfall-runoff analysis.

What we did

Constructed a deep learning model for rainfall estimation from Himawari infrared data.
And **calibrated and validated the model in Japan**.
The future work is estimating rainfall in SE Asia.





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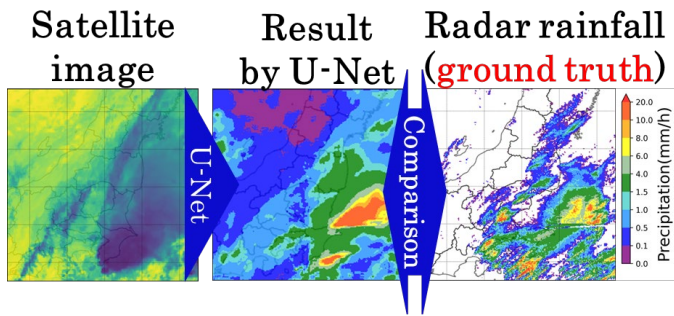
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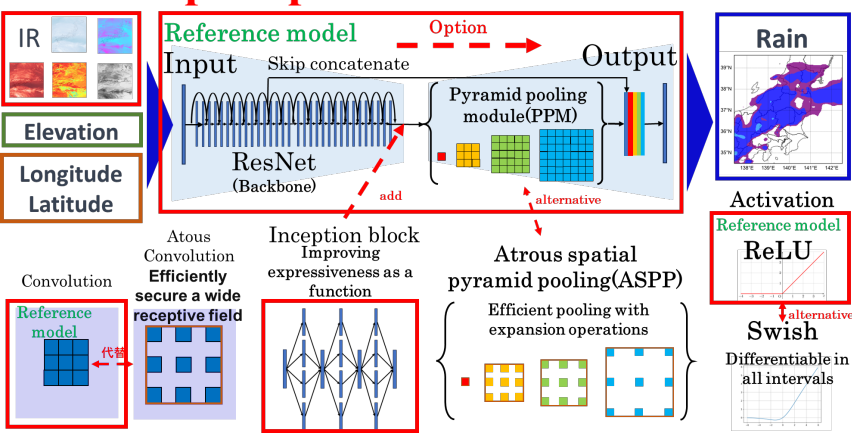


Methodology

U-Net is **insufficient in performance** for precipitation estimation.



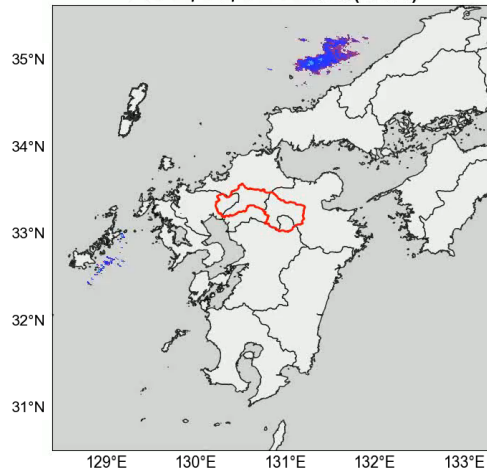
Compared the performance of different architectures and **constructed a model for precipitation estimation.**



Result

Weather Radar
(Ground truth)

2017/07/02 00:00(UTC)

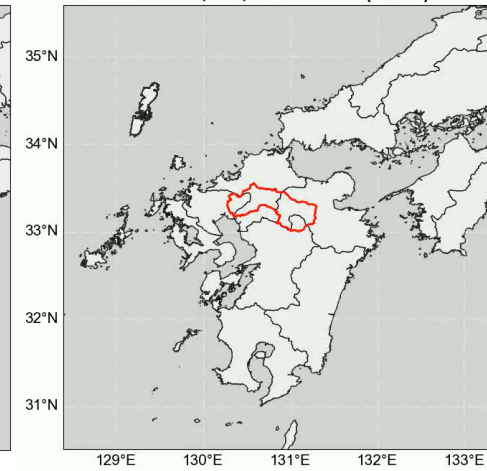


Flooding in July, 2019

HiDRED

(Proposed model)

2017/07/02 00:00(UTC)



GSMaP MVK

2017/07/02 00:00(UTC)

