

Authors response-point by point

[Final version] Answers to the comments of nhess-2018-357-referee-report-2.

We really thank to reviewer sincere and thoughtful comments. We tried to rephrase some parts of the text for improved readability. Thanks to the comments, the manuscript has been revised as follows before publication.

Abstract:

L11: ‘...and a strong research interest exists in and efforts’

“Tropical thunderstorms cause significant damage to property and lives, and a strong research interest exists in the advance and improvement of the thunderstorm predictability by satellite observations.”

L14: ‘time point’

“we examined the earliest possible time for prediction of thunderstorms as compared to the potential of low-resolution (4 km and 30 minutes) imageries of the former satellite.”

Data and Method:

P3, L14: ‘... invigoration under equal other conditions’

“The warmer atmosphere has the potential to contain more moisture, which increases the possibilities for invigorating thunderstorms if other conditions are equal.”

P3, L15: ‘...was generally assumed will to lead ...’

“The temperature increase associated with global climate change was generally assumed to lead to increased thunderstorm intensity and associated heavy precipitation events (Schefczyk et al., 2015).”

P3, L24-25: rephrase totally

“Sixty clouds, except for those the already developed, were only selected the ones that whose cloudy pixels first began to detect at 03:00–06:50 UTC (daytime) and 21:00–24:50 UTC (nighttime) during in July and August 2017.”

P4, L11: ‘...in the area of 12 km.’

“A tropical thunderstorm was found to be located in the area of 12×12 -km pixels.”

P4, L11: ‘..., whereas clouds and the light grey pixels’

“The dark grey indicates the detected cloudy pixel, and the light grey indicates the clear-sky pixel.”

P4, L18-19: ‘...establish the high-resolution imagery low-resolution imagery...’

“Our final study aim was to quantitatively compare their effectiveness in the advanced predictability of tropical thunderstorms through the imageries of geostationary satellite.”

Conclusion and limitation:

P6, L12-13: used 2 times ‘this method may not work’ in the same sentence

“First, this method may not work if a thunderstorm happens in the mesoscale convective system. In the mesoscale convective system, an intrusion of other developing clouds could frequently occur. Second, future studies are needed to determine whether thunderstorms are rainy after the lead time.”

Summary:

P7, L3-L5: ‘While the currently ... is questionable’: rephrase the sentence totally

“The currently used satellites can observe the area more precisely and their application to pre-disaster management are highly appreciated and demanded. This study examined the advance in the predictability of thunderstorms using geostationary satellite imageries.”