

## Response

Dear Dr. Gregor Leckebusch,

We appreciate you for your precious time in reviewing our paper and providing valuable comments, which helped us improve the manuscript greatly. The authors have carefully considered the comments and tried our best to address every one of them. We hope the manuscript after careful revisions meets your high standards, and the revised manuscript could be acceptable. Below we provide the point-by-point responses.

Thank you very much, and we are looking forward to hearing from you soon.

Sincerely yours,

Dr. Jinfang Yin

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a) “the formation of extreme rainfalls over this region” ==> rainfall events?

**Response:** Yes. It has been revised according to your suggestion. Thank you!

b) Please clarify the numbers behind the tropical cyclone/storm name. I guess this is the CMA ID number? Please give the full original reference.

**Response:** Thanks for your kind reminder. The tropical cyclone names are provided by a special committee under the World Meteorological Organization (WMO). As we see that the typhoon names are repeated year by year, they are distinguished by a corresponding number to the year followed by the occurrence order within this year denoted by the corresponding ordinal numeral behind the tropical cyclone/storm name. Taking the typhoon Doksuri (2305) as an example, it indicates the fifth typhoon Doksuri occurring in 2023. Using the name and number, we can easily find out the information about this typhoon.

c) “western Pacific subtropical high (WPSH)” ==> Western North Pacific Subtropical High (WNPSH)?

**Response:** Yes. It has been revised according to your suggestion. Thank you.

d) “life history” ==> life cycle?

**Response:** Yes. It has been revised according to your suggestion.

e) “the western boundary of the western Pacific subtropical high (WPSH) was destroyed” meaning unclear

**Response:** In the updated manuscript, it has been modified to “the western part of the Western North Pacific Subtropical High (WNPSH) weakened”. Thank you very much.

f) “an inclined vertical distribution” of what?

**Response:** It has been modified therein to “The marginal zone of this subtropical high became then inclined below 500 hPa”. See our updated manuscript for further details.

g) “Therefore, convections were limited” ==> Therefore, convection was limited

**Response:** Yes. Thank you! It has been revised accordingly.

h) “the orography in the west of North China was controlled by cold air”; unclear: orography cannot be controlled by air?

**Response:** Thank you very much for your nice reminder. It has been changed to “The mountain land in the western part of North China was occupied by cold air masses” in the updated manuscript.

i) “shallow southeasterly layer” meaning unclear: a layer southeast of what...?

**Response:** Thank you very much for your nice reminder. It has been changed to “only a thin layer of southeasterly wind (between 1.3 and 3.0 km) in the updated manuscript.

j) “Under this framework” meaning unclear

**Response:** It has been changed to “Under this regime” in the updated manuscript. Thank you very much.

k) “WPSH was further destroyed” meaning unclear

**Response:** Thank you very much for your nice reminder. It has been changed to “WNPSH was further weakened” in the updated manuscript.

l) “Consequently, convections triggered” ==> convection triggered ...

**Response:** Thanks for pointing this out. Revised accordingly.

m) “by orographic blocking can move upward”: meaning unclear: extend upward?

**Response:** Thank you very much for your nice reminder. Yes, you are right. It has been changed to “The convections triggered by orographic blocking are able to extend upward” in the updated manuscript.

n) “Comparatively speaking”; meaning unclear

**Response:** Thank you very much for your nice reminder. It has been changed to “Generally speaking”

o) “The results gained herein may shed new light on better understanding and forecasting of long-lasting extreme rainfall.” Meaningless: what was gained?

**Response:** It has been deleted in the updated manuscript.