

1-10) Refer to PART I-IV

11) A few instances of ambiguous citing have been found in the current version of the manuscript. For example,

Statement #1-LN 18-21

High resolution temporal and spatial representations of precipitation data are required in many hydrological applications, such as modelling flood inundation (Jhong et al., 2017; Pappenberger et al., 2005), analysing catchment responses in rainfall-runoff models (Xu et al., 2022; Pappenberger et al., 2005; Acharya et al., 2019), and forecasting extreme events and natural hazards (Ficchi et al., 2016; Mukherjee et al., 2018).

Statement #2-LN 365-366

Hourly rainfall data are essential for many hydrological, ecological, and meteorological applications (Lewis et al., 2018; Hatono et al., 2022).

Why would Lewis et al. (2018) and Hatono et al. (2022) not fit into statement #1 in the current version of the manuscript? I suggest the authors work with the handling editor to resolve these issues.

12) As per the authors, the independent variable transformation for the DEM is x/a , where “x” is the DEM value, and “a” is the transformation parameter. In this study, “a” was set as 10,000 to reduce the impact of the DEM on the hourly rainfall surfaces. The usual value recommended for interpolating monthly and daily data is 1000 (LN 202-203).

The latitude and longitude values are in decimal degrees. The DEM is in linear unit (e.g., m). The rainfall data is in mm. Therefore, there exists a non-normality issue with the data that have been used to fit the surface. I am not sure if the authors are aware of this. Does this lead to setting a random number to the value of “a” (e.g., 9999 instead of 10000)? The current version of the manuscript doesn’t justify the magnitude of “a”. Why would it jump to 10,000 from 1000 just because the work is hourly instead of daily or monthly?

13) Refer to PART VI