In this manuscript, authors developed a precipitation downscaling method based on a fine soil moisture product. It's an interesting topic to improve the spatial details of satellite-based precipitation. My comments are as follows.

1. As shown in figure 1, changes of soil moisture ($\frac{ds(t)}{dt}$) significantly lagged behind precipitation events, but the authors didn't consider this scenario.

2. Methodology: to facilitate the description, I suggests adding an algorithm flowchart.

3. Is the air temperature (T_a) in $eq.4$ time varying? The air temperature can be assumed to be the same in a small extent, but the temporal variation in temperature is inevitable and cannot be ignored.

4. The description of the residual correction in 3.23 (particularly for $eq.9$ and $eq.10$) is rather ambiguous and please check $eq.9$ again.

5. In section 3.3, the i in $eq.12-14$ stands for station but in figure 7 the i seems stands for the sampling time/number.

6. Section 4.1: Does the soil moisture-based precipitation estimation model used in section 4.1 contain the residual correction?

7. Line 296 – 303: This paragraph can be combined in the section of method.

8. Please provide additional explanation to the meaning of the points shown in Figures 6 and 9, and provide a description of how to obtain the statistical metric (also for table 1 and table 2) since they contain both temporal and spatial information.