**HESSD**

Interactive
comment

# *Interactive comment on* "A new probability density function for spatial distribution of soil water storage capacity leads to SCS curve number method" *by* Dingbao Wang

**Anonymous Referee #1**

Received and published: 27 March 2018

1. Inconsistent numbers ('one' in line 11, but '1' in line 351; similarly for other numbers such as 'zero'.

2. The motivation of this research is not strong, i.e., why the new distribution function is needed? Or what is the consequences of the mismatch of SCS-CN method and VIC type of model's boundary conditions. All those questions are not addressed in the introduction part. This is very important, since it can justify the value of this manuscript.

3. With the proposed distribution, when storage index approaches infinity, soil wetting ratio approaches a certain value ($\leq 1$) depending on the initial storage. Will this be satisfied in application?

[Printer-friendly version]

[Discussion paper]

4. The assumption used in deriving the probability density distribution is that the spatial distribution of precipitation is assumed to be uniform. This might need further explanation or justification.

———————————————————

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2018-32, 2018.