

To the editorial board of HESS

Re: HESS-2017-740 “**Real time rainfall estimation using microwave signals of cellular communication networks: a case study of Faisalabad, Pakistan**”

Dear Jonathan Ostrometzky

To begin with, I would like to thank you for your consideration of our paper. The comments you have given, made me to reconsider the paper on basic aspects.

Best regards,  
Muhammad Sohail Afzal

Comments of the reviewer/Reply

**Comment 1:**

I think that some details of the estimation procedure should be better presented. Specifically: what values of the different parameters and/or coefficients you used exactly in the rain retrieval process, and how you calibrated them? Indeed, Overeem et. al. (2016) algorithm is a well established one, but, it relies on parameters and coefficients (such as the power-law coefficients, the wet-antenna attenuation, etc.) which may have some variations from region to region (e.g., see (1))

*Reply*  
*See reply of RCI for detailed information.*

**Comment 2:**

In addition, in the manuscript conclusion, you express that: "The spatial error analysis also proved that rainfall is a stochastic variable". If you consider the rainfall to be a stochastic variable, then it might be interesting to consider discussing or even comparing your current work with recent models of rain estimation from CMLs which take advantage of the statistical properties of the rain-rate (e.g., (2))?

*Reply*  
*Yes, your comment is very important to compare the signal based rainfall with other statistical rainfall models for verifying the stochasticity. We will discuss in the manuscript the stochasticity nature of the rainfall. Basically rainfall follows the exponential distribution and shows erratic pattern having probabilistic distribution and hence rainfall is stochastic.*