

Interactive comment on “Real time rainfall estimation using microwave signals of cellular communication networks: a case study of Faisalabad, Pakistan” by Muhammad Sohail Afzal et al.

Anonymous Referee #1

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This paper is strongly based on Overeem, Aart, Hidde Leijnse, and Remko Uijlenhoet. "Retrieval algorithm for rainfall mapping from microwave links in a cellular communication network." *Atmospheric Measurement Techniques* 9.5 (2016): 2425-2444 (in the sequel, denoted by OLU). As I understood it, the authors applied the open code of OLU on measurements collected in a different geographic area, i.e. in Pakistan and analyzed the resulted performance of daily rainfall measurements. However, the methodology described in section 3 is far from being clear, and, in particular, deviations from OLU, if exist, are neither transparent not explained and justified. As such, the quality

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and the significant of the results cannot be evaluated. Therefore, major revision of the manuscript is required to be able to properly review it for potential publication. In particular, a major revision is necessary with respect to the following issues: 1. Clarifying the claimed contribution. The claim contribution can be in empirical results for rainfall in Pakistan, or in presenting improvements to the algorithm of OLU, or in specifying challenges in applying it to an area different from Holland, where its PoC has been demonstrated. The authors must focus on their claim contributing so the paper can be evaluated accordingly. 2. Detailed and accurate description of the methodology. The methodology must be detailed to a level where it can be used by other. Unfortunately, in this paper the details are not even sufficient to evaluate the validity of the results. Just few examples (out of many!): The code developed by OLU required setting of many parameters. Which parameters have used in this paper? How are they set and why? In particular, which values of b and d were used in (3)? What was calibrated in section 3.2 and how? What is a “corrected maximum and minimum received power”? How are the rain maps validated? etc. 3. Major improvement of the writing and the presentation of the paper. Few examples: The abstract is too long; many terms were not defined; many details are missing, and more. In addition, there are numerous minor points that must be corrected. I will not specify them since the required major writing hopefully lead to fixing them.

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