

Interactive comment on “One-year analysis of rain and rain erosivity in a tropical volcanic island from UHF wind profiler measurements” by A. Réchou et al.

Anonymous Referee #3

Received and published: 28 June 2013

A very nice paper that should be accepted for publication after a few relatively minor issues have been dealt with. The one significant issue is the title, which to this reviewer does not accurately reflect the contents of the paper. “One-year analysis of rain and rain erosivity in a tropical volcanic island” implies that a major focus of the paper is erosion and implies a more geological study. In fact the study is focused on estimating various rainfall parameters using a wind profiler radar. Some of the parameters do ultimately influence erosion (particularly the kinetic energy fluxes), however how these parameters relate to the rate of erosion (ie, the rate at which soil is removed) is beyond the scope of this paper. The title should be changed to something like “One-

C1442

year analysis of rain parameters determined from a wind profiler on a tropical volcanic island”.

The literature discussion is a very good and concise review. The one dynamical feature that might be added is a sentence about MJO effects since that is topical phenomena now.

There are a number of minor changes and typos:

Abstract line 16: replace “mere” with “simple”

Abstract line 18: replace “to” with “with”, ie: “. . . associated with strong . . .”

Page 3, line 5: Reword: “. . . most previous studies focus on the Northern Hemisphere”

Page 4, line 1: insert “for” prior to “which” (ie, “for which”)

Page 4, line 16: replace “revealed” with “found”, make technique plural ie techniques

Page 4 line 19: replace “every” with “all”

Page 5, line: replace “to” with “with”

Page 5 line 13: Reword: “Such an instrumental setup enables calibration of the radar data and investigation of the . . .”

Page 5 line 18: “pluviometer” is a very unusual word in English, why not just use “rain gauge”.

Page 6: indicate how far the profiler is from hills or significant terrain.

Page 6 line 7: Circuse is another word not used in English, I’m not sure what the meaning is here, perhaps volcanic basin or watershed? At the bottom of page 6 is “littoral” and it is unclear what that is, perhaps coast? “Planeze” is close enough to the English “plane” to be left as is.

Page 6, line 22: Is Gillot a location name or a missing reference?

C1443

How far is the profiler from the mountain or mouth of the valley?

Page 7, line 4: Reword: "During a 4 minute cycle, in clear air and rain, it provides vertical profiles of reflectivity, the three components of wind, Doppler spectral width and skewness."

Page 8 line 25: replace "attenuated" by "reduced"

Page 9 line 4: The threshold on skewness very efficiently removes snow echoes.

Page 9, line 15: is 40m/s a typo? Should it be mm/h?

Page 10, line 19: replace "concerned" with "influenced"

Page 13, line 12: "consistent"

Page 14 line 9 : "consistency"

Page 15, line 7: "another"

Figure 2: mark the location of the wind profiler

Figure 6 caption: "Profile", also either write "dark blue" or "black" (not just "dark").

Figure 7: Write: "These images are proved by Meteosat" (not "Such"). Also please indicate the position of Reunion Is. with an arrow or similar.

Figure 8: "particules" is not an English word, but particles also doesn't fit, what is meant here?

Figure 10 caption: "associated"

Figures 8 – 11: the plots are rather small. Care will need to be taken in the final version that the labels are readable. In those captions, it is not necessary to include "the" before the date; eg, "(a) 2 Feb 2010, ...".

Interactive comment on Atmos. Meas. Tech. Discuss., 6, 3249, 2013.

C1444