

Interactive comment on “Radar rainfall estimation for the post-event analysis of a Slovenian flash-flood case: application of the mountain reference technique at C-band frequency” by L. Bouilloud et al.

M. Zagar

mark.zagar@gmail.com

Received and published: 24 March 2009

The paper presents a method to correct the radar estimation of precipitation quantity, based on terrain occultation by the precipitation along the path. The results are very close to the observed amount of rainfall on the presented case.

I just have a few comments and questions that I would like to ask the authors.

Please show the operationally processed radar image and describe what corrections had already been applied, and present your results in terms of the relative improve-

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper



ment obtained using the terrain occultation approach. For example, Δ_c , the calibration error compensation is probably included in the abovementioned operational processing. In what is your Δ_c different from the default one? The knowledge of the operational radar centre at the NWS who produced the data in the first place is completely ignored in this study.

It seems that by choosing an appropriate PIA the desired rain intensity can be achieved. Is there a deterministic way of defining the value of PIA? This would help, since the method aims to be perhaps operationally applied in the future.

Does the method account for the fact that when it rains a water film is present on trees and other objects which can affect the surface radar return?

There is a peak in the rainfall field, reaching 300 mm, which appears some 15 km WNW from the radar site with PIA of 20 dB but is absent with the PIA of 10 dB. Also at other places the rainfall between PIA of 10 and 20 dB does not seem to increase equally. Why?

It would be interesting to see a comparison of the radar QP estimate with one or more NWP model results, in absolute as well as in relative terms, i.e. west/east distribution, etc. Also one figure showing the best radar estimate and the actual observed values could be very informative.

Figure 2: is rain rate measured with a gauge?

678-24: thin -> narrow

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 6, 667, 2009.

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

