

Interactive comment on “Regional flow duration curves for ungauged sites in Sicily” by F. Viola et al.

Anonymous Referee #1

Received and published: 24 October 2010

General comments:

The manuscript presents a regional model for estimating flow duration curves for ungauged basins in Sicily. The analysed basins have different flow behaviours perennial and ephemeral. The manuscript represents a substantial contribution to scientific progress, specifically substantial data and results for Mediterranean zones.

Specific comments:

- 1) Would you explain why several basins have the same colour in Fig 1.
- 2) The Fig 2 is inappropriate, the discharges reach 103 m³/s, while in the text (§20, p7063) the mean daily observed discharges vary from 0.04 m³/s to 7.6 m³/s. The

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discharges greater than 10 m³/s, result from the extrapolation of the empirical distributions.

- 3) §5, p 7066: which methods have been used to estimate the three model parameters (D_w, a and b)?

4) §5, p7066: “The same figure shows a good fit between empirical and estimated FDC’s”. The analysis of the figure is not sufficient to compare two samples or distributions. For the selection of “good distribution”, it is necessary to use goodness-of-procedures: analytical ones (Kolmogorov-Smirnov, Anderson-Darling, Cramér von Mises, Khi square etc.) or graphical methods like q-q plots.

- 5) The graphical analysis of FCD sub-zone 2 (Fig4) shows an important difference between empirical FCD and fitted FCD. It seems to come from a (RMSE, zone 2 = 0.34, table 3).

Technical comments:

- 1) Add a legend to Fig 1 (colour, black lines, red circle).
- 2) Some basins have black boundaries and others are without boundaries. The boundaries should be standardized.
- 3) Fig 4 has to be divided in two figures: sub-zones and FDC’s
- 4) The size of FDC (Fig 4) is so small to be well interpreted. It should be better to raise the figure scale and add secondary axis on the graph.
- 5) The scale of the different FDC curves has to be standardized.
- 6) It should be better to superimpose Fig 1 (basins) and Fig 4 (zones).
- 7) Table 1 and Table 2 are not readable.

Please also note the supplement to this comment:

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<http://www.hydrol-earth-syst-sci-discuss.net/7/C3148/2010/hessd-7-C3148-2010-supplement.pdf>

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 7, 7059, 2010.

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