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Hydrology and Earth System Sciences Discussions

Interactive comment on "Spatial interpolation of hourly rainfall – effect of additional information, variogram inference and storm properties" *by* A. Verworn and U. Haberlandt

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General Remarks:

This paper addresses the problem of interpolation of hourly rainfall between recording stations, primarily for the purpose of flood hydrology studies. The numerical experimentation is exemplary in terms of its thoroughness, thoughtfulness and care. Incremental methodologies (e.g. Ordinary vs External Drift Kriging and adding topographical information) are used in order to evaluate the efficacy of the different treatments and sound deductions based on intelligent evaluation of the results of the experiments are

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Interactive Discussion

Discussion Paper

well summarised in the conclusion. The paper is very well set out and was a pleasure to read. I recommend publication, once the few minor points I raise in the following section ('Details') have been addressed.

Details:

6412: 7 to 9: 'The exact ..1995)'. The meaning of this sentence is not clear.

6413: 1 to 2: ' ... zonal anisotropy ... ' what is the meaning of zonal in this context?

6414: 2 to 3: a small point of information for interest. Kriging with 'a linear isotropic semivariogram' can be referred to as interpolation with conical Multiquadrics (Hardy, 1971).

6414: 5: 'For interpolation, Kriging ...' the comma is essential for the correct meaning.

6416: 8 to 9: ' ... were multiplied together.' However, why multiply them? Why not just accept the interpolated values over the wet areas?

6418: 28: 'Brocken' (and other references to place names) not shown on the map in Figure 1.

6422: 5 & 12: KED or EDK?

6423: 15 to 16: including elevation in KED did not seem to improve matters - was that observed particularly in the convective events?

6427: 1 to 2: ' ... no rainfall fraction ... was the largest.' Is that desirable? Please make a value judgment.

6428: 1 to 4: this conclusion appears to be self contradictory, so one needs to go back to the tables and the main text; please word it more precisely to draw the contrast.

Reference.

Hardy, R. L. (1971). Multiquadric equations of topography and other irregular surfaces. J. Geophys. Res. 76, 1905-1915.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 7, 6407, 2010.