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Increasing data requirement to up-scale from local to landscape scale for water retention curves

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This research deals with scale-dependency effects on the calibration of parameter α in the Arya and Paris method for estimating the soil water retention function from textural data.

The study has been carried out in Destra Sele irrigation district along a transect, 5 km-length, where 100 soil cores were taken each 50 m.

The retention curves θ(h) were measured by tension table method as along as the soil particle distribution function by the hydrometer method.

Specifically, the following issues will be discussed:

- spatial variability of the measured variables;

- calibration of the Arya and Paris method;

- adequacy of the proposed PTF approach in the description of the spatial variability of the soil water retention curves;

- comparison between increasing data requirement to up-scale hydraulic properties.