

Interactive comment on “Explicitation of an important scale dependence in TOPMODEL using a dimensionless topographic index” by A. Ducharne

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The title could usefully be shortened and made into better English by removing the first two words. The first part of the ms is a straightforward review of TopModel, and adds little to existing published material. The second part discusses the scale dependence of the topographic index with respect to DEM resolution, and the knock-on effects to calibrated transmissivity. This is more valuable, but could be made still more useful if the sources of the dependence were fully pursued. To do this it would be sensible to look at the distribution of $a/\tan B$ values within a given catchment, to ask how the larger estimates of the average (or log average) come about when coarser resolution

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is used. The methods used for calibrating T or K are not explicit. I assume that the different $a/\tan B$ estimates link directly to the larger T or K, but more detail might clarify this point. The paper is currently rather slight, with no evidence of analysis of DEM data by the author for this ms, but could form the nucleus of an interesting discussion.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 6, 1621, 2009.

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