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Hydrology and Earth System Sciences Discussions



# *Interactive comment on* "Geomorphometry of drainage basins: a global view from the Shuttle Radar Topography Mission" *by* P. L. Guth

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What a great paper! It is concise, well-organised and (especially) packed with info. I could not write so concisely - the temptation to go into more detail and to expand on some interpretations would be too great. Yet here we have the 'big picture' and everything that is essential. Also some specific info about the largest or most extreme basins. It may be worth pointing out that truncation at 60deg obviously affects all Arctic Rivers„ but it includes also those starting well to the south - the Mackenzie, Ob , Yenesei and Lenaa. Hence the extremes mentioned in text may not be global extremes... The 8 Figs are fascinating, and I can only suggest a few improvements in presentation. They deserve enlargement: I suppose this is routine on-line, but when printed in print format , Figs. 1, 3, 5 7 and 8 are too small (for my eyesight....). Perhaps for final publication



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Interactive Discussion

Discussion Paper

each of these (with caption) should fill a page. Fig.5 may need two pages, even for readers to follow the points made inthe text. Its 4 legends could be x2 and stretch from Argentina to Tasmania. These 4 are only a subset of the interesting maps implied by the 42 variables in App.2. : I would like to see more, perhaps a couple of the greatest hydrological relevance could be added? For portrait format, Fig.3 could be rotated, and Fig.1 maps could be one above the other. Fig. 7 should fill page width, and Fig. 8 could have the legend beneath. On fig.4, all x scales are log - not just c). Fig 8 vars are in list order: could they be output in order of similarity (or mean correlation?), to give a more structured grid (cf. J. Bertin graphic tables)?. Another paragraph discussing these correlations would be useful. DETAILS: In abstract, 'convex' sort-of contradicts p1933 line 7. Replace with - 'more concave. Nevertheless, some of the order 4 and larger basins display one or more convexities.. Also line 4, follow 'drainage basins with the important qualification ' for a network from a 232 to 464 m resolution DEM' or some such. p1930line 18 'basin' 1931/3 how big are these areas? /15 'a single recognizeable channel' ? 1932/13 'bimodal area distribution' /18 'largest streams (in those terms)' /22 'in (c) clearly demonstrating...' 1933/ 1 to 3 Sentence describes Fig.3, so move earlier. /16 'main thalweg sinuosity' - not basin. /20 'at main thalwegs' /23 is the lowest class actually 0.5 to 1.5 1934 /11 'one strong correlation' /12 DELETE 'is a ... between' /13 expand S2S3 in text discussion 1935/5 'yet cheap...' rather than 'and...'? /13 after studies, INSERT 'but they do permit comparisons between basins and regions within this data set.' 1936/2 'in-memory' /9 DELETE first 'the' /13 REPLACE 'it' with 'each river segment' 1937/11 mention 'hypsometric integral' ...a much more frequent term than 'coefficient of dissection'. 1939/9 i.e. log ((basin relief)/area) /10 i.e. thalweg relief /distance /12 'Horton' /14 'of main thalweg' /17 'this analysis could...'

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 8, 1929, 2011.