



## **A question about land form geometry**

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P.Bird has shown in 2003 the power trend for the plates area vs. their cumulative number. We expect that this is the consequence of the more general law of the land surface construction. In present investigations only one land form type such as B-hills of Shary's land form classification were considered. B-hill is the part of the land surface surrounded by closed contour line. It is very useful that this definition combines all form types such as hills, highlands, plateaus up to islands and continents independently from their shape and size. 103 B-hills of the different hierarchic levels and sizes for a part of the Guiana Highlands (Venezuela) were calculated. The power or exponential trends accepted for all main B-hills parameters vs. their cumulative number are: - Absolute height of the B-hill's basis ( $N$ , from 350 to 2600 m): exponential trend, approximation coefficient ( $R$ ) is 0.97; - B-hill's volume ( $V$ , from 29000 cubic m to 1306 cubic km): power trend,  $R=0.91$ ; - Area of the B-hill's basis ( $S$ , from 0.02 to 6161 quadrate km): exponential trend,  $R=0.91$ ; - Maximal B-hill's height relatively to basis ( $Z_{max}$ , from 1 to 1463 m): power trend,  $R=0.96$ ; - Average B-hill's height relatively to basis ( $Z_{aver}$ , from 0.7 to 454 m): power trend,  $R=0.98$ . Next investigations show that the ratio  $V$  vs.  $S$  is also described by power trend ( $R = 0.96$ ). This result allows to prove that the linear sizes of the B-hills are restricted by Newton's geometrical proportions, because the B-hill's shape have a height compactness level caused by land surface formation processes. The fluctuation of the B-hill's parameters relatively Newton's geometrical proportions for the B-hills quantitative classification can be used.