

Interactive comment on “Gradually-varied open-channel flow profiles normalized by critical depth and analytically solved by using Gaussian hypergeometric functions” by C. D. Jan and C. L. Chen

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This paper presents creative interesting technique to analytically solve the gradually varied flow open channels (GVF) Gradually varied flow analysis for the design of open channel engineering activities. Basically, there are two methods to get GVF – profiles, analytical solution and numerical solutions, respectively. Analytical solution is basically of academic interesting, while numerical solution is for practical application with complex channel geometric shapes. This paper presents an unique solution to five GVF

– profile by using Gaussian hyper-geometric function (GVF), based on the GVF equation normalized by the critical depth. The results can apply not only to the channels of positive slope, but also to those of horizontal bed and negative slope. The limitation to the proposed method used here, is to find a suitable hydraulic exponent M and N . Therefore, how to find a suitable values of M and N for channels having different cross sections would be the challenge in the next research.

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