

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

Anonymous Referee #2

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The paper is about the computation of steady-state flow profiles in a prismatic channel by means of Gaussian hypergeometric functions. The author provides a new solution, based on the normalization with respect to the critical depth instead of the normal depth, that allows the profile reconstruction also in adverse channels. The paper is concise and well written. On the other hand, I think that the interest of the journal readers in the paper would be limited, unless the problem of the practical interest of the proposed method were seriously addressed. It could be questioned, in fact, that

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the computation of the Gaussian Hypergeometric Function (GYF) can be more time consuming than the application of a standard “rudimentary” approach like Runge-Kutta methods. It would be interesting to know in which range of the channel extension the Runge-Kutta methods perform worse than the GYF methods, for the practical tolerance required in the field problems.

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