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Nonlinear Processes in Geophysics
Discussions

Interactive comment on "Analytic Solutions for Long's Equation and its Generalization" *by* Mayer Humi

Anonymous Referee #2

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The novel aspects of this paper are:

(i) Makes a (slight) generalization of the classical Long's equation to non-isothermal flows

(ii) Derives analytic solutions under certain (special) conditions

Both these aspects could be useful if the author discussed the appropriate physics in some detail. Particularly in regard to (ii), the new solutions are obtained via a sequence of unmotivated transformations, and the final results shown in Fig 1 and 2 are not explained at all (eg, what is the effect of nonlinearity, etc)

Also, a couple of side remarks:

(i) Long's equation was first obtained by Dubreil-Jacotin (1935)

(ii) A major assumption of Long's equation, not mentioned by the author, is restriction to 2D; this is discussed in Yih (1967) and Akylas & Davis (2001)

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