

Interactive comment on “A comparison of the modern Lie scaling method to classical scaling techniques” by J. Polsinelli and M. L. Kavvas

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I appreciate the comments made by Dr. Mesa and view the changes recommended to contribute substantially to the objective of the article.

A suggestion was made to recognize the many authors that contributed to what it is now known as the Buckingham-Pi theorem. I am happy to offer acknowledgement to these authors not only for the sake of giving them their due credit, but also to give readers references to their works for the insight the works provide into the background and the issues of dimensional scaling.

Of the three methods introduced for scaling, the inspectional analysis method was meant to be presented as an intuitive version of the Lie group scaling. Emphasising this

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in order to facilitate the "clarification of a comparison between the other two methods" is worthy of consideration.

Dr. Mesa makes an excellent point in stating that the Lie group method extends to symmetries beyond scaling, and the more readers are aware of this the better. I agree that this point should be discussed clearly in the article.

Type-2 self similarity is a phenomenon that plays an important role in many studies concerning scaling, and Lie scaling in particular. A discussion of type-2 self similarity would both contribute to the intentions of this article and inform readers of avenues which may be used to solve difficult problems in hydrology and engineering.

Finally, I would like to express my thanks for the valuable and insightful comments provided by Dr. Mesa and the time he took to explain in detail his thoughts on this article.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 12, 10197, 2015.

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