

Referee report on "General and alien solutions of a functional equation and of a functional inequality" by W. Fechner and E. Gselmann

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The results presented appear to be new and somewhat interesting. This referee found numerous small errors in the mathematics and the English, but if these are corrected then the paper deserves to be published. I begin with the mathematical mistakes, omissions and misprints:

1. p. 2, l. 10: "the center of X " should be "the center of Y ".
2. In Lemma 2.1, X must be *uniquely* 2-divisible.
3. In Remark 2.1, f_1 is *not* a solution of (1.3). The only nonzero solution is f_2 .
4. Theorem 2.2 does not require the result of Jessen, Karpf and Thorup. In fact it can be verified simply by substitution. (The result of Jessen, Karpf and Thorup is the *converse* of Theorem 2.2.) Also X does not need a ring structure; it needs only to be an abelian group.
5. *subadditive* (p.5) should be defined.
6. p. 7, l. -1: The right hand side of the equation should be $z[f_e(x+y) - f_e(x) - f_e(y)]$.
7. p. 9, l. -1: Include in the equation also $\phi(-x, y) = \dots$

A partial list of the English mistakes includes the following.

1. p. 1, l. -5: "to be" should be removed. Also, a period is missing from p. 1, l. -1.
2. p. 2, l. 5: "Is" should be capitalized.
3. p. 2, l. -10: "In parallel, ..." (Neither "paralelly" nor "parallely" is a word.)
4. p. 3, l. 6: "This" should be "These".
5. p. 3, l. 11 and p. 6, l. 10: "confess" should be "confine".
6. p. 4, l. 2: should read "... will be used ...".
7. p. 4, l. 6: "not" should be "no".
8. p. 6, l. -9: "its" should be "their".
9. p. 8, l. 7: "does" should be "is".
10. Corollary 3.1 is poorly worded. Better would be "Let X be an integral domain ... 2 and 3, and assume that equation (*) holds for $f, g : X \rightarrow X$ ".
11. p. 9, l. 8: "function" should be "functions".

12. p. 9, l. 13: "Then" should be capitalized.

13. Remark 4.1: "except of" should be "except in".