

A Memo from the Editor-in-Chief (Aliakbar Montazer Haghighi) to the Readers

concerning the paper entitled:

Remarks on the Stability of some Size-Structured Population Models II: Changes in Vital Rates due to Size and Population size, authored by Mohammed El-Doma.

Published in AAM Vol. 3, No. 1, June 2008

On June 26, 2008 I received an e-mail from Professor Jozsef Farkas indicating that he has learned through the Edinburgh Mathematical Society mailing list about a publication in the recent issue of our journal "Applications and Applied Mathematics: An International Journal (AAM)". The publication, in his opinion, contains results from his paper "Stability and regularity results for a size-structured population model" co-authored with T. Hagen published in J. Math. Anal. Appl. 328 (2007), no. 1, 119—136, without any reference to the paper. Additionally, he also believes that another paper previously published by the same author, El-Doma, entitled "Stability Analysis for the Curtin-McCamy's Age-Structured Population Dynamics Model" contains some results from his other papers: Farkas, J. Z. "Stability conditions for the non-linear McKendrick equations", Appl. Math. Comput. 156 (2004), no. 3, 771—777; and Farkas, J. Z. "Stability conditions for a non-linear size-structured model", Nonlinear Anal, Real World Appl. 6 (2005), no. 5, 962—969, again without referring to the papers.

Professor Farkas' claims were reviewed by a colleague in Canada, who found that no wrong doing has occurred. However, reference to the papers by J. Z. Farkas and T. Hagen would have been appropriate. Thus, on the recommendation of the reviewer of the claims, it was decided that the following response from the author be posted for readers.

A Note on Professor Jozsef Farkas' Claims

from

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Abstract

In this short note, I try to answer and explain my views about a complaint that is raised by Jozsef Z. Farkas and Thomas Hagen that I published in AAM two papers: El-Doma(2007), and El-Doma (2008) and I did not reference their work: Farkas (2006), and Hagen, et al. (2007).

1. Introduction

In this note, I look into a complaint raised by Jozsef Z. Farkas and Thomas Hagen that I published two of my recent papers in AAM and I did not reference their work. I look into each pair of papers to see if there is some reason to reference such work. Though there are many reasons not to reference Farkas (2006), the general reason for not referencing both papers is that they basically use semigroups theory, and I usually do not reference such papers as all references in my papers show. I can also turn things around and ask Jozsef Z. Farkas and Thomas Hagen the same question, why they did not reference El-Doma (2006) paper in their later work, for example, Hagen, et al (2007), and Hagen, et al (2008)?

2. El-Doma (2007) and Farkas (2006)

In this section, I look into El-Doma (2007), and Farkas (2006) papers. I note that El-Doma (2007) studied the stability of the Gurtin-MacCamy's age-structured population dynamics model studied in Gurtin, et al. (1974), whereas Farkas (2006) studied a system of such equations that describes the dynamics of n interacting species. The results in El-Doma (2007) are obtained by using integral equations, and the results in Farkas (2006) are obtained using a positivity result obtained earlier by another author, the positivity result is obtained via semigroups arguments. The stability results in El-Doma (2007) are for the general model whereas the stability results in Farkas (2006) are for a special case when the vital rates take special forms. Also, if we assume that $n = 1$ in Farkas (2006), then we obtain a trivial result that can be obtained from El-Doma (2007) easily.

Furthermore, the main stability result obtained in Farkas (2006) which is Theorem 2.6 has a mathematical error in inequalities (2.30), since the function $-\beta_P^i(., P_*)$ may have an absolute minimum; also, Theorem 2.1 has an ambiguous statement, specifically, "all the roots of the function".

Generally speaking, I do not see any connection between these two works neither in method or results. The assumptions in Farkas (2006) are very restrictive, and as I have said before, the case, $n = 1$, which matches the case studied in El-Doma (2007), is trivial.

3. El-Doma (2008) and Hagen, et al. (2007)

In this section, I look into El-Doma (2008), and Hagen, et al. (2007) papers. We note that El-Doma (2008) studied a size-structured population dynamics model that is similar to that studied in Hagen, et al. (2007). The model in Hagen, et al. (2007) assumes that individuals in the population have finite maximum size; this is in contrast to what is in El-Doma (2008) where it is not assumed, and the general stability result works for both finite maximum size as well as infinite size. Again the method used in El-Doma (2008) is integral equations whereas the method used in Hagen, et al. (2007) is semigroups theory.

In these two papers the basic stability results are different, for example, Theorem 3.4 in El-Doma (2008) and Theorem 5.7 in Hagen, et al. (2007) are different. Theorem 5.7 requires 4 conditions two for positivity and two others for the roots of the characteristic equation. However, Theorem 3.4 in El-Doma (2008) requires only one integral condition. In the case of age structure, it is easy to see that the result in Hagen, et al. (2007) fails, in some cases, for example, when condition (5.16) is not satisfied, whereas the result in El-Doma (2008) works at least in some cases. Also, in this case, Theorem 3.6 in El-Doma (2008) gives immediate stability results while Hagen, et al. (2007) fails.

In addition, there are two theorems in El-Doma (2008), namely, Theorem 3.6 and Theorem 3.7 which have no counterpart in Hagen, et al. (2007) since these results are for the case when the maximum size of an individual is infinite.

Generally speaking, though the two papers deal with similar models the results are obtained via two completely different methods which makes the two papers separable and distinct. And, of course, there are several stability results that can be found in the references therein for exactly the same model.

4. Conclusion

I looked into the complaint raised by Jozsef Z. Farkas and Thomas Hagen that I published two papers in AAM without referencing their two papers. As a general rule, I do not reference papers with semigroups methods as my papers show. I also, pointed out some mathematical errors in Farkas (2006) paper, also the results in Farkas (2006) when $n = 1$ is a special case of El-Doma (2007).

I also, looked into the paper Hagen, et al. (2007) and pointed out that their method is based on semigroups and therefore, is completely different than the method employed in El-Doma (2008). Furthermore, the results in El-Doma (2008) contained further stability results that are new and distinct. When comparing stability results in El-Doma (2008) and Hagen, et al. (2007), I found out that the method in the latter fails, in some cases, whereas the method in the former gives stability conditions for the stability of a nontrivial steady state.

References

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