**Declaration of co-authorship concerning article for PhD dissertations**

Full name of the PhD student: Johannes Aagaard Enevoldsen

This declaration concerns the following article/manuscript:

|  |  |
| --- | --- |
| Title: | Using generalized additive models to decompose time series and waveforms, and dissect heart–lung interaction physiology |
| Authors: | Johannes Enevoldsen, Gavin L. Simpson, Simon T. Vistisen |

The article/manuscript is: Published  Accepted  Submitted  In preperation

If published, state full reference: Enevoldsen, J., Simpson, G.L. & Vistisen, S.T. Using generalized additive models to decompose time series and waveforms, and dissect heart–lung interaction physiology. J Clin Monit Comput (2022). https://doi.org/10.1007/s10877-022-00873-7

If accepted or submitted, state journal:  Journal of Clinical Monitoring and Computing

Has the article/manuscript previously been used in other PhD or doctoral dissertations?

No  Yes  If yes, give details:

**Your contribution**  
  
Please rate (A-F) your contribution to the elements of this article/manuscript, **and** elaborate on your rating in the free text section below.

1. Has essentially done all the work (>90%)
2. Has done most of the work (67-90 %)
3. Has contributed considerably (34-66 %)
4. Has contributed (10-33 %)
5. No or little contribution (<10%)
6. N/A

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| --- | --- |
| Category of contribution | Extent (A-F) |
| The conception or design of the work: | A |
| *Free text description of PhD student’s contribution* ***(mandatory)***  Johannes came up with the idea, that GAM’s could be used for fitting waveforms, and, together with Simon Vistisen descided that it could be presented in combination with a more general introduction to GAM’s | |
| The acquisition, analysis, or interpretation of data: | B |
| *Free text description of PhD student’s contribution* ***(mandatory)***  Johannes acquired sample data as part of the study presented in Paper 3, did the initial data analysis, and discussed interpredations and model improvements with co-authors. | |
| Drafting the manuscript: | B |
| *Free text description of PhD student’s contribution* ***(mandatory)***  Johannes prepared the initial draft, which was then revised and supplemented by co-authors | |
| Submission process including revisions: | A |
| *Free text description of PhD student’s contribution* ***(mandatory)***  Johannes submitted the manuscript and handled revisions after discussion with co-authors. | |

**Signatures of first- and last author, and main supervisor**

|  |  |  |
| --- | --- | --- |
| Date | Name | Signature |
| 26-10-2022 | Johannes Enevoldsen |  |
| 26-10-2022 | Simon Vistisen |  |
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Date:

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Signature of the PhD student