**Reviewer’s report**

**Title:** Intrinsic foot joints adapt a stabilized-resistive configuration during the stance phase

**Version:** 0  **Date:** 02 Nov 2019

**Reviewer:** Scott Telfer

**Reviewer's report:**

In this study, the authors focus on determining a new variable (in the foot at least), the 3d angle between the joint moment and joint angular velocity vectors. The paper would be stronger if there was a comparison between different groups (foot types or pathological conditions) to show that this variable can distinguish between groups beyond what has been demonstrated for other, however the methods are generally sound.

I would like a clearer definition of what the authors mean by the 3d angle is "stabilizing" the joint. The propulsive and resistive definitions seem more intuitive (the joint is performing concentric and eccentric work, respectively?) but this could also be more clearly stated.

I have some concerns about the compounding of errors between the skin mounted foot markers and the proportionality scheme used to divide the forces. This is acknowledged by the authors in the discussion.

95-97: The hypothesis is a little vague, "partially propelling, resisting, or stabilized"? Do you mean the 3D angle is not 0, 90 or 180 degrees during stance? It seems to cross 90 degrees for all the joints at several points.

107-108: What do the plus/minus values represent?

148-153: How was the torque component of the force plate measurement treated in the redistribution of the kinetic data?

Results: It's interesting that the cal-mid and mid-met joints seem to have opposite configurations at the second half of stance, I would have expected these to be similar

Figures: what are the vertical lines on figures 2:5?

**Level of interest**

Please indicate how interesting you found the manuscript:

An article whose findings are important to those with closely related research interests

**Quality of written English**

Please indicate the quality of language in the manuscript:
Declaring of competing interests

Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organisation that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal.