Reviewer #1

Reviewer's report - Major Compulsory Revisions

The reviewer things that the paper doesn't provide anything newer than those methods analyzed in [6]. The fact that the same method was tested in a non-healthy subject is not an adequate reason for what this paper should be published. Moreover, the training method described for this experiment lacks of analysis. A comparison of the results achieved with the different training methods should be analyzed, since this is the only "new" feature of the paper, compared to [6]. In general, the reviewer's opinion is that this paper has not adequate innovation for accepting it for publishing to this journal.

- Minor Essential Revisions

The figures, especially Fig. 3, is not comprehensible. The quality of the writing should be improved. The authors are encouraged to avoid short sentences of one or two words enclosed in commas. i.e. "..., then, ..."

- Discretionary Revisions

None
Level of interest An article of limited interest
Quality of written English Needs some language corrections before being published
Statistical review No, the manuscript does not need to be seen by a statistician.

Reviewer #2

Reviewer's report Major Compulsory Revisions

1.
I congratulate the authors with their interesting work. However, I feel they got carried away in their enthusiasm and really should pay attention to what is needed for good (force) control of a prosthesis. In their paper the authors report on results obtained with the feed-forward path of the control loop. Unfortunately, they do not discuss the importance of the feedback path, which is an essential part of prosthesis control. In my opinion this discussion is compulsory.
As a result of a lacking discussion on the feedback, the authors are overly optimistic is

some of their claims:
• Background section, last sentence: “ … paving the way for the next generation of EMG-controlled hand prostheses, which will be adaptive and naturally forcecontrolled.”
• Discussion and Conclusion section last sentence: “ … open up the exciting scenario of a patient being able to control in a totally natural way … “
In both examples there is no “natural control” or something that comes close. This should be rephrased.

Minor Essential Revisions:

2.
Explain “s.o.a.” (abstract & background)

3.
The description of the arm defect of the subject involved in the experiments is not in agreement with the ISO-standards. I believe, it should read: transverse defect, forearm, upper third.

4.
Surprisingly, in the first paragraph of the background section the body-powered prostheses are ignored. They can, by principle, provide force control, especially with voluntary closing terminal devices.

5.
Tripodal grip = tripod grip (materials and methods section).

6.
Please, provide a legend to Table 1. Explain what is x%, and what is /y

7.
In the discussion and conclusion section, line 5, it reads “Interstingly”. This should be “Interestingly” ?

8.
Please, discuss the relationship between the RMS of the EMG-signal and the muscle force. This relation is not as clear as the authors suggest. Provide references.

Level of interest An article whose findings are important to those with closely related research interests
Quality of written English Acceptable
Statistical review No, the manuscript does not need to be seen by a statistician.