Reviewer Report

Title: **Nighres: Processing tools for high-resolution neuroimaging**

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Reviewer name: **Christin Y. Sander**

Reviewer Comments to Author:

The manuscript by Huntenburg et al. is a Technical Note that presents a new python package "Nighres" for processing high-resolution neuroimaging data. The presented software package is based on a previously implemented processing tool software (CBS High-Res Brain Processing Tools) that contains a Python-wrapped interface of the available existing functions and can thus easily interface with pure Python code or other Python packages. This new interface is likely going to make the software accessible to a broader set of neuroimaging users. The paper itself is well-written and structured very logically. It explains the implementation of the python package clearly and gives a nice example of an image processing pipeline to obtain tissue classification from an anatomical image. One main part that is missing from the manuscript is a summary of the description of the functionality of the software, performance metrics or comparison to existing neuroimage processing tools. Including this would help make the manuscript a more complete description of the software and provide readers with a useful overview. Main comments: 1) Including a section with an overview of the functionality and performance of the software package: Although the purpose of this paper is to take an existing package, not all readers will be familiar with the previously developed CBS Tools. One example on tissue classification is given, which is very helpful, but a section outlining/summarizing currently available functions, and the performance in the context of existing software, would make this paper a more complete description. 2) In the introduction, a major argument is made that this software is specifically developed to be able to handle very large datasets. It would be helpful to include a more direct discussion of the arguments why this specific package is able to handle large datasets better than / or is equivalent to other popular neuroimaging software. This is linked to the point above, where the performance or functionality could be compared (quantitatively and/or qualitatively) to other available neuroimaging software packages. Alternatively, it should be clearly stated why this software is providing a new functionality not existing in other toolboxes. Additional specific comments: 3) Page 4, col 1, ll 15-19A little more background / explanation of the first paragraph will be helpful as it is not intuitive why both a quantitative T1 map and a T1-weighted image automatically gives a brain mask. 4) Page 4, col 1, l 26placement of the comma5) Page 5, col 1, l 37: "The C++ code generated by .. (to) interfaces''Sentence structure is not complete, please check. Comment on references: Some references contain either website or doi links, but not all. In addition, some references refer to conference proceedings that are not all publicly available, or searchable. Please review the references accordingly, and provide a website link with accessed date if needed. Please make sure to check for consistency and follow the guidelines of this journal.

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