

Interactive comment on “Three-dimensional normal mode functions: Open access tools for their computation in isobaric coordinates (p-3DNMF.v1)” by Carlos A. F. Marques et al.

Anonymous Referee #2

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In the present paper the authors describe a free software package (p-3DNMF.v1) for computing 3-Dimensional Normal Modes. The software is based on the original work of Kasahara and Puri (1981), and Tanaka (1988), and subsequent work by different authors. The described software seems comparable to MODES (Žagar et al., 2015) in large parts except the authors use Python and MATLAB instead of FORTRAN, and the computation is done on pressure instead of sigma levels. While the former may make the package more user friendly, the latter allows for computing an energy cycle including the exchanges between kinetic and potential energy.

Overall the paper is well written and structured. It provides a comprehensive descrip-

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tion of the theory (equations) including relevant references, and convincingly illustrates the potential of the provided software. In addition, the code is easily accessible, together with a tutorial and some test data (though the data are not part of the software archive, as indicated in 'code and data availability' (p27L25)). Although the paper does not present significant new scientific results nor a new methodology the development and provision of such a software package is a very valuable contribution worth to be published in GMD. Thus, I recommend publication. I only have two remarks, where (2) is of pure technical nature:

1) Reading the abstract, the reader may assume that a new methodology is presented as the basis of the software package. However, as described in the introduction the package is mainly based on the original work of Kasahara and Puri (1981), and of Tanaka (1985). This may be made clearer already in the abstract. In addition, in the software manual (tutorial) no reference is made to the work of Tanaka. This, in my view, needs to be changed.

2) Technical: The authors may think of improving Figures 10 & 11 by enlarging the boxes/numbers/characters

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