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Interactive comment on "pynoddy 1.0: an experimental platform for automated 3-D kinematic and potential field modelling" *by* J. F. Wellmann et al.

S. Zlotnik (Referee)

sergio.zlotnik@upc.edu

This paper presents a python framework to automatise the execution of jobs of the Noddy kinematic simulator. Moreover, some tools to process the outputs are provided. The framework allows to perform a study of the influence of different parameters that otherwise would be extremely involved and time consuming.

Due to the common uncertainties present in geological models in general, the study of the influence of the parameters is vital. Uncertainty analysis and sensitivity studies should be a standard part in any modelling process, although due to the time required to perform them systematically, sometimes they are minimised or neglected. These

kind of frameworks simplifies the systematic testing of the parameters and therefore promotes good practices in the geological modelling community.

The paper is well written and in general is easy to follow. Its content is clearly aligned with the goals of the Geoscientific Model Development Journal. I recommend its publication subject to some minor comments and suggestions which I believe would improve the readability of the manuscript.

* Section 2.2 (Kinematic structural modelling with Noddy) might be reduced. In particular the Eulerian/Lagrangian part is hard to follow to me. Probably a list of features of Noddy provide enough information, without the description of "how a fault is represented" or "how rotations are implemented".

* Section 2.3.1 Only Magnetic fields are mentioned here. Although, in the examples, gravity fields are computed and shown. A list of the available fields that can be synthesised from the models would be helpful.

* Three numerical schemes are described to compute observables (spatial convolution, spectral and full spatial). From Section 3.2, one could infer that gravity is always computed with the later scheme. Is that right? Are the different schemes used to compute different fields?

* Could pyNoddy be used to perform inversion studies? For example, which is the timing of the activation of some fault that produces a gravity field matching better with observations? Maybe something in this line could be added in the discussion section, showing the potentialities of the framework.

* Also for the discussion: do you think is would be possible to develop an abstract framework that could be used not only with Noddy, but with any (or a wide range) of simulation tools? Maybe, just extending a "modelingProgram" class one could get an simple way of generate in a systematic way a serie of model results and automatically deal with the produced outputs.

* I found the paper more easy to follow than the User Manual (UM). For example, - the installation section of the UM is harder to follow than the Annex. - Some dependencies stated in the realm file are not in the UM. - Some typos are present (e.g. missing slash on page 4: "(Sec. [sec:inst-textsfpyn-from]). - for a completely new user the section "1.11 What is Noddy?" should be at the very beginning. - There is some noise on the OS that are required to run Noddy/pyNoddy. On Page 7: "The software runs on Windows only, but the source files (written in C) are available for download to generate a command line version of the modelling step alone: https://github.com/flohorovicic/pynoddy It has been tested and compiled on MacOSX, Windows and Linux." It was not clear to me not whether Noddy run in windows only or in any platform until later in the manual. - The "modelling step" is any of the four steps stated before at same page? - issue with bolds between page 9 and 10 - Because (I assume) most users won't have Noddy already installed, I suggest starting the installation procedure with the instructions to install Noddy.

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