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Nonlinear Processes in Geophysics
Discussions
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Interactive comment on "Generation and propagation of stick-slip waves over a fault with rate-independent friction" *by* Iuliia Karachevtseva et al.

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First, we would like to thank the reviewer for his interest in our work and for helpful comments that will drastically improve the paper. As indicated below, we have checked all comments provided by the reviewer and have addressed necessary changes accordingly to his feedback.

C1: "The paper does a poor job of placing the work in a context with previous work that relates fault slip behavior to elastic oscillations of the rock surrounding the fault. Addressing this comment will make the paper more readable to a wide earth science audience and place it in better context to other work that has been done on a similar topic".

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A1: Thank you for your suggestion. The additional literature review part has been added.

C2: “An application of simple models like the Burridge-Knopoff model and 1D model of an infinite elastic rod driven by elastic shear spring for the declared purpose should be substantiated in details”.

A2: The original BK model consists of an assembly of blocks, where each block is connected via the elastic springs to the next block and to the moving plate. In the present paper, we simulate the simple one-dimensional version of BK model, which consists from one block. Additional details and description of these models were added into the paper.

C3: “The constant friction factor used in the models instead of generally accepted rate-and-state friction law has to be grounded and supported by lab results and field observations”.

A3: We do not advocate constant friction. We just demonstrated that even with constant friction a stick-slip like behaviour is possible. We now added discussion where we analyse the effect of rate-dependent friction.

C4: “A discussion section of the manuscript is required for an analysis and comparison of the numerical results and drawn conclusions with published data obtained under laboratory and natural conditions”.

A4: We agree with the reviewer. The discussion part has been added.

C5: “Moreover, I realized that the English writing is not good enough, some parts of the text are difficult for understanding, there are some syntax and spelling errors, and I strongly recommend reviewing the text by a native English speaker”.

A5: Thank you for your suggestion. This has been done.

Please also note the supplement to this comment:

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http://www.nonlin-processes-geophys-discuss.net/npg-2016-82/npg-2016-82-AC2-supplement.pdf

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