

Interactive comment on “1997 Kronotsky earthquake and tsunami and their predecessors, Kamchatka, Russia” by Joanne Bourgeois and Tatiana K. Pinegina

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Received and published: 31 October 2017

Authors' responses to reviewer #1

Journal: NHESSTitle: 1997 Kronotsky earthquake and tsunami and their predecessors, Kamchatka, Russia Author(s): Joanne Bourgeois and Tatiana K. Pinegina MS No.: nhess-2017-172 MS Type: Research article

Response to Professoressa Serafina Barbano:

We thank Dr. Barbano for her very careful, constructive and timely review of our manuscript. Her suggestions and corrections are easily incorporated into a revision.

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She did a very thorough edit, for which we are grateful. We will rewrite/clarify our abstract accordingly and make changes in the text, figures, tables and supplement. Dr. Barbano raises at least two significant issues: distinguishing the historic deposits, and locating the 1997 earthquake rupture. Here are notes on those issues:

Notes about distinguishing the historic tsunami deposits: 1) Numerical dating: We reason that neither OSL nor radiocarbon would distinguish the two 1923 events, or 1960 from 1952. Our use of chemically and/or mineralogically finger-printed tephra in such cases is more reliable. The sand at the surface must be 1997, and that reasoning agrees with the Hawaiian tide-gage data. 2) We reason that the intermediate sand layer is 1960 based on the observations that 1952 is dying off to the north, but yes, that interpretation is also supported by the presence in a few localities of the 1955 Bezymianny tephra. 3) As to the two 1923 events, Dr. Barbano's comments, corrections and questions will help us clarify our reasoning. We cannot make a strong case to distinguish the two, to say with confidence that the deposit is from one, not the other (or both). The primary reasoning for reinterpreting the magnitude of the April event comes from the far-field tide=gage record.

A note about actual location of the 1997 rupture: We will clarify our own interpretation, although we are hesitant to draw boundaries on the rupture area. We think that with the recent interpretations of others, we can be more clear about which ones are consistent with our data. We will clarify that when we say “lower in the south” we mean the Kronotsky Peninsula sites, as well as Olga Bay to the south, not Chazhma vs. Storozh.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2017-172>, 2017.

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