

***Interactive comment on* “Loss assessment of building and content damages from potential earthquake risk in Seoul, Korea” by Wooil Choi et al.**

Anonymous Referee #1

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This study evaluated risk based on probabilities of earthquake damages and their loss amount for Seoul city of Korea. The challenge of this study is an implementation of real and detailed data based on many earthquake scenarios considering active fault information. The contents in this study is worth to be published in the journal after major revision. Especially, more step-by-step details should be provided to efficiently understand loss amount evaluation clearly. The reviewer also addresses the following suggestions.

In Abstract, there are no general findings from this study. In Introduction, challenge of this study should be added. In Introduction, addition of literature review is required

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to emphasize the challenge of this study. Numerate past research outcomes and their limitations. The results from this study is much different from those from the previous reports written in the Introduction. Please compare their results and explain the reasons of the difference. (Page 1 Line 31 and there after) Indicate specific magnitude scale in the manuscript with brief explanation of physics. (example: Richter local magnidue...) (Page 2 Line 23) Do not use ambiguous expression in referencing figures and tables (replace "As shown in the above figure" with "As shown in Fig. 2") (Page 2 Line 30) Replace "36 the structure types" with "36 structure types"; Classification of structure types, occupancies, and seismic codes are not clearly explained. (Table 1) In addition to Distribution, add frequncies corresponding to eath distribution. (Table 2) There are three formulas in Table 2. It is necessary to either provide the other two formulas or erase contents of formulas I and II. (Page 3 Line 21) Indicate the reference time of building statistics of 6.3 million. (Page 3 Line 30) Replace "each building" with "each buliding damaged by earthquake." Reference is required for information provided by Korea Appraisal Board. (Page 4 Line 7) "Korea has been" should be "Korea has been considred as." Replace "neighboring countries" with "neighboring countries, such as Japan, China, and Taiwan." (Page 4 Line 8) Consider including the Yangsan Fault in your analysis. The fault might not have an influence on your research outcome, but it is worth to check its impact. (Page 4 Line 21) Abbreviation should be spelled out at its first appearance. "PGA" should be "Peak Ground Acceleration (PGA)." [Eq. (1)] To use minimum number of symbols, replace symbol S with PGA in Eq. (1). (Page 4 Line 27) Replace "the values of the coefficients" with "the values of the coefficients of C0, C1, C2, and C3." (Page 5 Line 22) "S is Peak Ground Acceleration (PGA) and αA is the amplification factor at the short period." should be indicated in Fig. 5. (Page 5 Line 26) "as shown table 3" should be "as shown in Table 3" (Page 6 Line 11) "zones: Zone I which includes Seoul area and Zone II" (Page 6 Line 13) For "zone 2A of UBC and the code of buildings built after 2009 is similar to zone 2B of UBC," indicate definition of Zones 2A and 2B. (Page 6 Line 29) Indicate definition of period T in Eq. (2). (Page 7 Line 4) "four 5 states;" should be "four 5 states:" (Page 7 Line 8) Subscription

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is required for "Sd" and symbols in Eq. (3) (Page 7 Line 13) "is median value" should be "is the median value" (Page 7 Line 31) "Table 5 and 6" should be "Tables 5 and 6" (Page 8 Line 3) "isn't" should be "is not" (Page 8 Line 4) "higher" should be "larger" (Page 8 Line 5) "like" should be "such as" (Page 8 Line 6) Unified expression of dash use: "low-rise" and "low rise" are mixed. [Eq. (4)] There are mis fonts in subsription in Symbols in Eq. (4). (Page 9 Line 7) "% 15" should be "15%" (Tables 5, 6, and 7) "Km" should be "km"

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