Response to Anonymous Reviewer #2

The research group thanks Anonymous Reviewer #2 for their careful review, constructive feedback and technical screening. We know the reviewer's comments, suggestions and list of technical corrections will allow our group to forge an enhanced version of the manuscript. Our answers to the specific comments and technical corrections are as follows (denoted with a > symbol and blue text). Some additions are placed in magenta text.

General comments:

The proposed research presents an effort to assess the long-term trend in social vulnerability to storm surge induced flood hazard in Shenzhen, China using a system of SV indicators. It was constructed using a complex approach consisting of combination and weighting of results obtained through application of three single evaluation methods. The work is interesting in the context of preparedness, mitigation and adaptation of a large city to natural disaster impacts. The study is well situated among the existing regional assessments and has well defined scope. Authors show fluency in applying and interpreting the risk theory. The number and relevance of proposed indicators are suitable. The assessment of contribution of indicators to final SVI is particularly valuable. Conclusion are very well structured. Such a study is certainly useful for wide range of stakeholders, especially policy makers, local authorities and coastal managers. Nevertheless, there are several issues that need to be addressed.

Specific comments:

(1) As authors themselves pointed out the proposed approach can be used to assess social vulnerability for a variety of disasters, of which they had chosen storm surges. However, detailed enough information on the storm surge induced flood hazard intensity and extent is not provided as well as which coastal areas are most susceptible.

> Yes, detailed information on storm surge-induced flood hazard intensity and extent is provided. Information about coastal areas, which are most susceptible, is located in the first paragraph of the **Introduction**.

(2) Evidently, the lowest level of regional disaggregation is the city of Shenzhen and SVI is relevant for the entire city but not for separate districts within the city limits. This could be a problem with the selected hazard as there is no distinction between areas,which are under direct and indirect hazard impact. Although this is not crucial for a SVI, a better distinction could raise the value of the proposed research. As it is, the study provides only a broad view of the SV in the region. I wonder if there is a possibility to focus on the communities, which are most threatened by flood hazard.

> Yes, we understand your concern. We'd like to focus on small scale districts and communities which are most threatened by storm surge but it is difficult or even impossible to obtain community data at this spatial resolution. This work is a creative attempt to analyze publicly available "macroscopic" data in order to explain the "microscopic" phenomena for such similar Chinese coastal cities. Furthermore, the data's spatial coverage is a narrow, 20 km length in the north-south direction across Shenzhen City and therefore most areas of Shenzhen are threatened during storm surges. We believe our results address the problem to a certain extent. From this research, it becomes feasible for us to deliver suggestions to local governments about the need to collect and archive statistical data for most threatened coastal communities.

(3) I would change "temporal variability to" to "trends in" in the title since a process (variable) can (significantly) vary temporally while SV (despite of minor fluctuations) is more likely to exhibit increasing or decreasing trend over a certain period of time (as discovered by the authors).

> Yes, it is a very good suggestion. We made a title change from "temporal variability to" to "trends in" in the updated manuscript.

(4) Compared to the Method chapter, Results & Discussion one seems a bit under developed. I think readers would appreciate a more in depth exposition. The paper's chapters are overly subdivided, which makes the text somewhat choppy. It is suggested to decrease the number of subdivisions.

> Yes, you are correct and we agree with you. We will condense the chapters to keep only secondary titles, especially, the Method chapter. The Results & Discussion chapter will be balanced (content wise) with the other chapters, so research results are expressed in a more holistic manner.

(5) Although the English language used throughout the manuscript is generally correct, it would still need grammar improvements. The text is sometimes rather heavy to follow and understand so stylistic upgrade is also recommendable.

> Yes, we do agree with you. In the updated manuscript, the grammar and English language will be improved. We will work on reducing the heaviness of the text and balance the content better for readability purposes.

Technical corrections:

A detail list of advisable corrections and specific questions follows. It is solely meant to increase the paper impact by improving the grammar, text fluency and better understanding of the complex connections between methods, resulting indicators and study findings:

L16: Change to "Evaluation of social vulnerability to storm surges is important for any coastal city to provide..."

> Changed to "Evaluation of social vulnerability to storm surges is important for any coastal city to provide..."

L19: Change to "which are subsequently combined by weighting in order to calculate a common SVI."

> Changed to "which are subsequently combined by weighting in order to calculate a common SVI."

L21-22: Split into 2 sentences

> The sentence was split into 2 sentences and now reads "Shenzhen has a current reputation of having the most economic development potential and is a representative city in China. The city is chosen to evaluate its social vulnerability to storm surges via a historical social and economic statistical dataset spanning from 1986 to 2016."

L22: "The research extends further by analysing the city's temporal variability." This sentence is not clear. Temporal variability of what?

> This sentence "The research extends further by analysing the city's temporal variability." was deleted.

L25: Change to "continuous increase of medical services supply"

> Changed to "continuous increase of medical services supply"

L26-27: Exposure and sensitivity define vulnerability hence should precede it in the exposition.

> Changed from "Results reveal that social vulnerability keeps almost constant from 1986–1991 and 1993–2004, while it decreased sharply in the remainder of times to show a 'stair-type' declining curve over the past 30 years. Resilience is progressively increasing by virtue of a continuous increase in medical institutions, fixed asset investments and salary levels of employees. These determinants contribute to the overall downward trend of social vulnerability for Shenzhen. Exposure and sensitivity increased slowly with some fluctuation, causing the changes of social responsibility to transpire."
to
"Results reveal that resilience is progressively increasing by virtue of a continuous increase in medical institutions, fixed asset investments and salary levels of employees. These determinants contribute to the overall downward trend of social vulnerability for Shenzhen. Exposure and sensitivity increased slowly with some fluctuation, leading to fluctuations in the social vulnerability results. Social vulnerability keeps constant from 1986–1991 and 1993–2004, while it decreased sharply in the remainder of times to show a 'stair-type' declining curve over the past 30 years."

L23-24: Change to "during 1986–1991 and 1993–2004… in the rest of the time to form..."

> Changed to "during 1986–1991 and 1993–2004… in the rest of the time to form..."

L27: What do you mean by "causing the changes of social responsibility to transpire"?

> Changed from "causing the changes of social vulnerability to transpire." to "leading to fluctuations in the trends of social vulnerability."

Keywords preferably should not repeat the title. Only "Combined evaluation; Indicator system" give additional insight to the study.

> Yes, we will keep "Combined evaluation; Indicator system" as keywords and include other keywords.

L32: Change to "during transition of"

> Changed to "during transition of"

L32-34 Split the first sentence into two sentences

> The sentence was split into two sentences and reads as "Storm surge refers to the abnormal volumetric rise of sea water layered above the astronomical tide due to severe meteorological

conditions experienced during transition of low-pressure weather systems. Tropical and extratropical cyclones rank near the pinnacle among marine natural hazards in terms of human casualties and expensive infrastructure losses."

L33: Omit "historical counts of"

> "historical counts of" was omitted from L33.

L35: Change "ability" to "potential"

> Changed from "ability" to "potential" in the updated manuscript.

L37-38: Provide citations for mentioned catastrophic events

> Forbes, C., Rhome, J., Mattocks, C., and Taylor, A. A.: Predicting the storm surge threat of Hurricane Sandy with the National Weather Service SLOSH model, J. Mar. Sci. Eng., 2 (2), 437–476, https://doi.org/10.3390/jmse2020437, 2014.

Frank, N. L., and Husain, S. A.: The deadliest cyclone in history? Bull. Am. Meteor. Soc., 52 (6), 438–445, 1971.

Fritz, H. M., Blount, C., Sokoloski, R., Singleton, J., Fuggle, A., McAdoo, B. G., Moore, A., Grass, C., and Tate, B.: Hurricane Katrina storm surge distribution and field observations on the Mississippi Barrier Islands, Estuar. Coast. Shelf Sci., 74 (1-2), 12–20, https://doi.org/10.1016/j.ecss.2007.03.015, 2007.

Fritz, H. M., Blount, C., Thwin, S., Thu, M. K., and Chan, N.: Cyclone Nargis storm surge in Myanmar, Nature Geosci., 2 (7), 448–449, https://doi.org/10.1038/ngeo558, 2009.

Irish, J. L., Resio, D. T., and Ratcliff, J. J.: The influence of storm size on hurricane surge, J. Phys. Oceanogr., 38 (9), 2003–2013, https://doi.org/10.1175/2008JPO3727.1, 2008.

Lagmay, A. M. F, Agaton, R. P., Bahala, M. A. C., Briones, J. B. L. T., Cabacaba, K. M. C., Caro, C. V. C., Dasallas, L. L., Gonzalo, L. A. L., Ladiero, C. N., Lapidez, J. P., Mungcal, M. T. F., Puno, J. V. R., Ramos, M. M. A. C., Santiago, J., Suarez, J. K., and Tablazon, J. P.: Devastating storm surges of Typhoon Haiyan, Int. J. Disast. Risk Re., 11, 1–12, https://doi.org/10.1016/j.ijdrr.2014.10.006, 2015.

Rosenzweig, C., and Solecki, W.: Hurricane Sandy and adaptation pathways in New York: Lessons from a first-responder city, Glob. Environ. Change, 28, 395–408, https://doi.org/10.1016/j.gloenvcha.2014.05.003, 2014.

Xian, S., Feng, K., Lin, N., Marsooli, R., Chavas, D., Chen, J., and Hatzikyriakou, A.: Brief communication: Rapid assessment of damaged residential buildings in the Florida Keys after Hurricane Irma, Nat. Hazards Earth Syst. Sci., 18, 2041–2045, https://doi.org/10.5194/nhess-18-2041-2018, 2018.

Yi, C. J., Suppasri, A., Kure, S., Bricker, J. D., Mas, E., Quimpo, M., and Yasuda, M.: Storm surge mapping of typhoon Haiyan and its impact in Tanauan, Leyte, Philippines, Int. J. Disast. Risk Re., 13, 207–214, https://doi.org/10.1016/j.ijdrr.2015.05.007, 2015.

L40: Change to "governments/local authorities managing coastal areas"

> Changed to "governments/local authorities managing coastal areas" on L40.

L41: Change to "The occurrence of marine natural hazards depends not only on the hazards intensities but also on urban exposure and vulnerability".

> Changed to "The occurrence of marine natural hazards depends not only on the hazards intensities but also on urban exposure and vulnerability".

L45: Omit "created"

> The word "created" was omitted.

L47: Omit "the risk of". Disaster can be initiated by an event, risk is result of the disaster.

> "the risk of" was omitted from L47.

L48: Change "propagate into" to "result in"

> Changed from "propagate into" to "result in" in the manuscript.

L49: Add "In this sense, vulnerability has become..."

> Added "In this sense, vulnerability has become…" to L49 in the manuscript.

L52-53: vulnerability to

> Changed from "vulnerability of" to "vulnerability to".

L53: Add "reducing the consequences of this type..."

> Added "reducing the consequences of this type..." to the manuscript.

L54: Omit "definition and"

> "definition and" was omitted from the manuscript.

L58: "views about"

> Changed from "views of" to "views about" in the manuscript.

L59-61: Rephrase as follows "Based on the theory of sustainable development and from of disaster economics perspective, vulnerability of a system is identified by its ability to prevent and resist a disaster (Turner et al., 2003b)"

> Rephrased to "Based on the theory of sustainable development and from a disaster economics perspective, vulnerability of a system is identified by its ability to prevent and resist a disaster (Turner et al., 2003b) ,"

L65: Change to "Existing studies divide vulnerability into"

> Changed to "Existing studies divide vulnerability into"

L74: What do you mean by "overall place vulnerability"?

> "Overall place vulnerability" means vulnerability covering the whole study area, it also can be called "the whole vulnerability".

L75 Add "critical" before "infrastructure"

> The word "critical" was added before "infrastructure"

L79: Change to "Before 1990s,...was paid...were carried out..."

> Changed to "Before 1990s,...was paid...were carried out..." on L79.

L81: Change to "However, large losses of life and property resulting from the occurrence of more devastating disasters have brought up the attention on the role of social vulnerability in disaster impact."

> Changed to "However, large losses of life and property resulting from the occurrence of more devastating disasters have brought up the attention on the role of social vulnerability in disaster impact."

L86: Change "management" to "assessment". Management involves not only evaluation.

> Changed "management" to "assessment" in L86.

L86-87: Change to "Hence, governments should analyse...policies such as...to improve its adaptation capacity..."

> Changed to "Hence, governments should analyse...policies such as...to improve its adaptation capacity..."

L88: Change to "considerable amount of research...studies on..."

> Changed to "considerable amount of research...studies on..."

L90-91: Change to "Analysis of SV to storm surges...is important due to four main reasons"

> Changed to "Analysis of SV to storm surges...is important due to four main reasons"

L91 "Firstly,...few assessments of...in which...is considered"

> Changed to "Firstly,...few assessments of...in which...is considered" in the manuscript.

L92: Choose between "detailed" and "comprehensive". They are synonyms.

> Removed "detailed and" and kept "comprehensive" in L92.

L92: What is the object of screening? Could you explain the mechanism of screening?

> First, we consider the continuity and availability of data. Second, we must retain the indicators related to the losses caused by storm surges, such as fishery output value and port cargo throughput. Third, we reserve the indicators that reflect the strength of disaster prevention and mitigation, such as regional GDP. Finally, we retain the weak indicators at the time of the disaster, such as female proportion and total enrollment of students.

L92: The process of screening itself cannot be a buffer against disaster.

> Reply with above paragraph.

L94: Change to "other coastal cities, which are exposed to similar or other types of marine natural hazards." Once more, authors need to specify if and how the methodology was tailored to hazards resulting from storm surges. As it is, it is applicable to any disaster causing floods (and not only), which means the authors should reconsider the title or give additional emphasis on the hazard intensities and extents related to storm surges; in other words, to further justify their choice of disaster.

> Changed to "other coastal cities, which are exposed to similar or other types of marine natural hazards." in the manuscript. Storm surge is the one of the most dangerous natural disasters that happen in Shenzhen. As stated above, we explain the mechanism of screening dedicators. We will test and validate the indicator system using loss data for storm surges, contained in the *China National Marine Disaster Bulletin*.

L95: Change to "Secondly, since 1979, political reform and openness has led...in Shenzhen." Omit "during the study period"

> Changed to "Secondly, since 1979, political reform and openness has led...in Shenzhen." and omitted "during the study period" from L95.

L95: Omit "expedited process"; "rapid" or "accelerated" is enough to describe the process.

> "expedited process" was omitted from L95 and "rapid" was kept to describe the process.

L97: Change to "By choosing Shenzhen, we study a typical scenario of SV change as a result of..."

> Changed to "By choosing Shenzhen, we study a typical scenario of SV change as a result of..."

L98: "Thirdly, so far,..."

> Changed to "Thirdly, so far,..." in the updated manuscript.

L100: "Instead, herewith, a composite…"

> Changed to "Instead, herewith, a composite…" in the manuscript.

L102: "Data envelopment analysis (DEA)...evaluation in China to discover..."

> Changed to "Data envelopment analysis (DEA)...evaluation in China to discover..." in the manuscript.

L105-106: Rephrase "Five methods for combined evaluation were used by Liu and Liu (2017) and results determined that among seven coastal cities selected for evaluation in Shandong Province Yantai city and Binzhou city had the highest and lowest vulnerability, respectively."

> Rephrased to "Five methods for combined evaluation were used by Liu and Liu (2017). Their results determined that among seven coastal cities in Shandong Province selected for evaluation, Yantai city and Binzhou city had the highest and lowest vulnerability, respectively."

L108: Rephrase "The socioeconomic vulnerability to typhoon-induced storm surges for municipal districts of Guangdong Province was assessed using the fuzzy comprehensive evaluation. It was determined that vulnerability presented a large spatial heterogeneity (Zhang et al., 2010)."

> Rephrased to "The socioeconomic vulnerability to typhoon-induced storm surges for municipal districts of Guangdong Province was assessed using the fuzzy comprehensive evaluation. It was determined that vulnerability presented a large spatial heterogeneity (Zhang et al., 2010)."

L111: Omit "with results from Zhang et al. (2010)"

> "with results from Zhang et al. (2010)" was omitted from L111.

L112: Change "differences" to "dimensions".

> Changed from "differences" to "dimensions".

L115: Temporal patterns = trend ?

> Changed from "Temporal patterns" to "trends" in the manuscript.

L116: Can you explain what you mean by "macroscopic angle"? Here, you can state again the period your research covers.

> The macroscopic angle means that the scale of the evaluation is based on the whole city but not street or community scales.

L122: Change to "Since its establishment in 1979, in just 40 years,...through a..."

> Changed to "Since its establishment in 1979, in just 40 years,...through a..." in the manuscript.

L124: Change to "However, due to its location at the coast of the Pearl River Delta (Fig. 1a,b) and its proximity to the northern part of the South China Sea (Fig. 1b,c), Shenzhen is facing many coastal disasters threatening its sustainable development, among which storm surge induced disasters are the most severe."

> Changed to "However, due to its location at the coast of the Pearl River Delta (Fig. 1a,b) and its proximity to the northern part of the South China Sea (Fig. 1b,c), Shenzhen is facing many coastal disasters threatening its sustainable development, among which storm surge induced disasters are the most severe."

L127:"[http://www.sz.gov.cn/ytqzfzx/yingji/yjya/201712/t20171206_10111758.htm (last access: 30 June 2019)]" This should be moved to the list of references.

> This direct URL was already present in the following citation, located in the references section, and was removed from L127:

Shenzhen Marine Disaster Emergency Plan, Retrieved from http://www.sz.gov.cn/ytqzfzx/yingji/yjya/201712/t20171206_10111758.htm (last access: 30 June 2019), 2017

L129: "116 typhoons have seriously affected the Shenzhen coastal area"

> Changed to "116 typhoons have seriously affected the Shenzhen coastal area" in the manuscript.

L136: Maybe you mean "The increased frequency of storm surges"

> Changed to "The increased frequency of storm surges" in the manuscript.

L137-138: It is not clear if EWS is a recommendation? Can you relate this to your research results? Which are those "particularly susceptible areas"?

> It is valuable to assess the social vulnerability to storms surges for Shenzhen in order to provide necessary support for the government to improve the level of disaster prevention.

L140: Change "fully contained" to "entirely available"

> Changed from "fully contained" to "entirely available" in the manuscript.

L141-142: Change "which was compiled by the Shenzhen Statistical Bureau and a Shenzhen-based investigation team of the National Bureau of Statistics, and published (updated annually) by the Shenzhen Statistical Bureau." to "which is compiled and published on annual basis".

> Changed from "which was compiled by the Shenzhen Statistical Bureau and a Shenzhen-based investigation team of the National Bureau of Statistics, and published (updated annually) by the Shenzhen Statistical Bureau." to "which is compiled and published on annual basis".

L153-154: Change to "Due to the absence of long-term statistical data on some important indicators, this study is limited to a partial statistical dataset spanning the period 1986 - 2016 in order to sustain the data integrity."

> Changed to "Due to the absence of long-term statistical data on some important indicators, this study is limited to a partial statistical dataset spanning the period 1986–2016 in order to sustain the data integrity."

L165: By "evaluation result", don't you mean "final score"?

> Yes, we mean 'final score'.

L175-178: Provide citations for all mentioned methods and tests.

> Thanks for your suggestion, as citations have been added to the updated manuscript.

L179&201: Method or strategy?

> Strategy has been deleted. The correct expression is "combined weighting method"

L179-181: Rephrase as follows "Finally, the combined evaluation results are achieved,which have significant advantages compared to those of all single methods due to weighted value of each evaluation method."

> Rephrase as follows "Finally, the combined evaluation results are achieved, which have significant advantages compared to those of all single methods due to weighted value of each evaluation method."

L183-184: It is not clear if the first sentence describe a statement or research action.

> The first sentence is a research action.

L187: I cannot understand what the meaning of "knowledge simplicity attribute of rough set" is.

> It means that rough set theory can simplify knowledge and extract the main information from it.

L188: Among which?

> Deleted "among them"

L199: Change "all above evaluation methods" to "all evaluation methods in use"

> Changed from "all above evaluation methods" to "all evaluation methods in use".

L201: Using "a single evaluation framework", do you refer to combined weighting method?

> Yes, we refer to the combined weighting method.

L213: Change to "Calculate the proportion of the indicator j in year i (rij).

> Changed to "Calculate the proportion of the indicator j in year i (rij)." in the manuscript.

L234: The meaning of the second sentence in the paragraph is not clear.

> We will simplify and clarify the introduction of these five methods in one section as you recommend.

L260: Due to limitations of the methods in use, each single evaluation can lead to a different conclusion."

> We will organize this section again.

L260: Use "Nevertheless" instead of "However". Section 2.4 is really hard to follow. Could you better explain the connection between methods (section 2.3) and resulting indicators (section 2.4)?

> We used "Nevertheless" instead of "However". We have adjusted the content in those sections of the paper.

L286-288: It is not clear if this is achieved within previous researches or is a stage within the present study.

> It is achieved with the present study with the previous researches as reference.

L289: Storm surges are caused by the action of tropical and extratropical cyclones not accompanied by them.

> Changed "accompanied" to "caused" in L289.

L290: Could you explain better the screening process? What is the reason to take out of consideration man-made barriers?

> Explained above in L92. Urban fixed asset investments may reflect the consideration of man-made barriers.

L291: To what disaster body do you refer: the city itself or a body in general? Which are the bodies you screen?

> Body is not used here accurately. We want to say that different aspects are influenced by the disaster. For example, storm surge can destroy roadways, injure people, disable transportation, etc. We will correct the expression in this section.

L291-293: The sentences seem to repeat one another. Could you clarify and rephrase.

> Delete "As for the exposure of a disaster body, this research selects key indicators that are highly accessible and can reflect a disaster-stricken area at a macro level."

L304: Change "While regional GDP" to "Since the amount of regional GDP"

> Changed from "While regional GDP" to "Since the amount of regional GDP".

L305: Change "equates" to "corresponds", "for" to "to". The last two sentences in section 2.4.1 should change their places.

> Changed "equates" to "corresponds" and changed "for" to "to". The last two sentences in **Section 2.4.1** were switched.

L312: Again, is Shenzhen city the disaster body? Industries of primary importance for Shenzhen city are…

> This was explained above for L291.

L313: Change "fluctuations" to "changes"

> Changed "fluctuations" to "changes" in the updated manuscript.

L315: Change "higher winds and precipitation patterns" to "severe winds and precipitations"

> Changed "higher winds and precipitation patterns" to "severe winds and precipitations"

L316: Change "inconvenient" to "busy"

> Changed "inconvenient" to "busy" in the manuscript.

L317: Change "suffer casualties outside" to "suffer injuries or even cause casualties"

> Changed from "suffer casualties outside" to "suffer injuries or even cause casualties".

L322: Change "with which" to "meaning that"

> Changed from "with which" to "meaning that".

L324: Change "aspects" to "groups"

> Changed "aspects" to "groups" in the updated manuscript.

L326: Change "more money is devoted into" to "more resources are provided/spent for"

> Changed "more money is devoted into" to "more resources are provided/spent for".

L330: Add "consequences" after "resists disaster"

> Added "consequences" after "resists disaster".

L331: "per capita"

> Changed to "per capita" in the updated manuscript.

L333: Change "infrastructure construction" to "public services"

> Changed from "infrastructure construction" to "public services" in the updated manuscript.

L334-335: Change to "level of medical and health care, including the number of medical and health institutions and their equipment (e.g. beds etc...) as well as the number of health employees."

> Changed to "level of medical and health care, including the number of medical and health institutions and their equipment (e.g. beds etc...) as well as the number of health employees."

L336: "potential victims"

> Changed to "potential victims" in the updated manuscript.

L342: Change "social vulnerability to storm surges discussed in this research can be approximately divided into" to "degrees of social vulnerability to storm surges discussed in this research are set to..."

> Change "social vulnerability to storm surges discussed in this research can be approximately divided into" to "degrees of social vulnerability to storm surges discussed in this research are set to..."

L345: It is not clear if proposed SVI threshold values were calculated by the authors or were borrowed from Yuan et al. (2016).

> We changed the standard and calculated the threshold values by ourselves.

L346: Change "close" to "similar"

> Changed "close" to "similar" in the updated manuscript.

L422: Change "obvious" to "pronounced", "variation" – "variability"

> Changed "obvious" to "pronounced" and "variation" to "variability" in the manuscript.

Figure 2 is not referred to in the text.

> We will refer to Figure 2 in the first paragraph of **Section 2.1** and explain it.

L753: Change to "and outlined using crimson colour."

> Changed to "and outlined using crimson colour." in the updated manuscript.

L836: Change to "method (blue line). The weighted value of SVI is depicted with thick red line."

> Changed to "method (blue line). The weighted value of SVI is depicted with a thick red line." in the updated manuscript.

Table1/3: Resilience: Per capita

> Changed from "Resilience" to "Resilience: Per capita" in both Table 1 and Table 3.

Acknowledgements: Modification

> Modified the Acknowledgements section to reflect the changes in work ownership and figure descriptions.

Figure 2: Replacement

> Replaced original Figure 2 with a Python version Figure 2, for consistency among all other plots.