Abstract Evaluation

Name of Editor: \_\_\_Sam Myers\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Identify the below sections in the abstract – if you identify them, summarize the arguments. Add comments if: something is missing, the text could be made clearer and/or the arguments stronger.

* Started with one or two facts that relate to the problem statement

Glacier mass loss is happening at significant rates and a significant contributor to current sea level rises.

I think the word “is” is missing (“…significant rates and *is* a significant…)

* Explained why these facts are important

Understanding the extent that the sea level will rise is critical for understanding our changing planet and societal planning as anthropogenic climate change continues.

The phrase “the extent that the sea” was a little difficult for my brain to parse. I think it’s the repetition of a bunch of short words. Rephrasing it or breaking the sentence up might help.

* Introduced the problem

However, there are still significant uncertainties in the amount of mass glaciers will lose in the future.

The problem here is that right now we can’t predict how much glacial melting will occur as time goes on.

* Stated the goal

We propose to perform a rigorous and expansive set of modeling to improve the predictions of glacier mass loss.

By using a (presumably new) modeling technique, they will be able to put new constraints on the rates of glacial mass loss, thus helping address the identified problem.

* What is the key component? What is the target?

The key component here are the models. The target is measurements of glacial mass.

* Explained the strategy.

The modeling will be accomplished by using 11 glacier models and10 general circulation models along with four Representative Concentration Pathways (RCPs) as boundary conditions.

This new set of models will be made up of 21 component models. 11 will be glacier models and 10 will be GCMs. The boundary conditions for these models will be taken from RCPs.

Right now, there’s a little ambiguity about what the RCPs are for. Something along the lines of “…circulation models, *using* four Representative…” might make it more clear. There’s also a missing space between “and” and “10”. I think it would also be good to give a little bit more information here. I’m unsure about what the novel concept here is. Is it combining these specific models? Is it that these are new boundary conditions? Are they being applied to a new data set? Is it the fact that so many models are being combined? Clarifying will help make the strategy more convincing.

* Stated the importance of the solution *to the subfield*

Our modeling will provide an improved estimate of glacier mass loss expected by 2100, which is critical to estimating regional and global sea level rise.

Answering some of the questions about glacier mass loss rate will help other aspects of climate forecasting/modeling.

* Explained the broader implications of results to *other subfields*

Furthermore, this work by quantifying glacier ice melt, is relevant to any system that involves glacial melt such as glacial river flow rates and land changes due to the removal of ice.

Work like this that provides context for ice melt will be applicable to any other geological situation where ice melt is a major driver.

This makes the abstract land a little flat. Helping address issues of climate change seems much more impactful than providing another tool to understanding glacial processes. I think the last two sentences would be better off being switched. I also think the word “by” in “…this work by quantifying glacier…” is unnecessary and breaks the flow of the sentence. I also think the comma should be after “involves glacial melt” instead of after “quantifying glacier ice melt”. As per class discussion, the word “Furthermore” can be cut out.