

### **General Comments for Reviewers:**

The authors would like to express our sincere thanks for the insightful and constructive comments provided on the manuscript. All of the specific suggestions have been carefully considered and addressed in the revised version. Indeed, following their recommendations, the manuscript has been certainly improved.

More specifically, the structure of the paper has been improved, enhancing its clarity, by means of including in the revised manuscript the following elements requested by Reviewers:

- A Paragraph on the goal of the paper, detailing its specific objectives.
- A Paragraph describing the Sections.
- A New Section on conclusions to give clearer take-home messages, and to ensure a summary of the discussion, reminding the reader of its relevance.

As requested by both reviewers, the content of the validation of different regional systems has been homogenized, with additional details and references provided for some of them.

Finally, the manuscript has been updated addressing all the specific comments and minor corrections proposed by both reviewers.

We appreciate the time and effort the reviewers have put into evaluating our work. Their feedback has been invaluable in improving the manuscript.

### **Specific comments for Reviewer 1.**

As requested, to reach similar level of detail than for the Canadian System, some extra details on model validations performed by other systems have been included.

With respect to the question on the usage of satellite data (Line 173): “are satellite data not used to validate model in the coastal region due to lack of remotely sensed data product or also due to higher uncertainty of remotely sensed coastal data?”

Both interpretations suggested by the reviewer are valid: There is a lack of remotely sensed data in the coastal zone (mainly due to sea-land boundary effects) and the available remote sense data in the coastal zone also exhibits a higher uncertainty there. The sentence has been revised in the manuscript for clarity.

All minor corrections suggested by the Reviewer are included in the updated manuscript.