We would like to thank the reviewer for their comments and positive response to our manuscript. In our revised manuscript we will make the following changes in light of the reviewer's helpful suggestions.

We have formatted reviewer comments in italics.

Our responses are in normal font.

1 Overview

My only concern is that the methodology is presented as a general tool for salt marsh and tidal flat identification, while I believe that its application is limited to the specific type of marshes presented in this study. I suggest the authors to:

1.1 Suggestion 1

better clarify the specs of the methodology that are tightly linked to the morphological characteristics of the specific study sites in order to make aware the user of the limits in applying the methodology

We take the point of this comment, similar to comments made by Reviewer 1, and will add more text on the limitations of the method (especially in low relief or emergent marshes). We will also add some more example marshes in an appendix to demonstrate the method works beyond the UK.

However, we do feel it necessary to clarify that the TIP method is not site specific. It has been designed to apply to a wide variety of marshes and not only the test sites. We tested the method across a number of sites in the United Kingdom because these sites have a wide range of tidal range and wave climates. The basic features the method extracts, namely flat areas separated by scarps, are common to many marsh environments (albeit with some exceptions, which we will describe in the revised text). We acknowledge that the UK sites do not have a large variety of vegetation types, but in general the basic geometry of marshes is common across salt marshes, from the macrotidal Mont San Michel estuary to the microtidal Venice lagoon, which have rather different vegetation assemblages. Marshes along the Gulf and Atlantic coasts of North America also share the common morphology of flat areas separated by scarps. The stabilisation of deposited sediment and increased deposition rates (by direct trapping and velocity reduction) induced by vegetation are processes that occur in salt marshes regardless of their geographical location and local forcings. This process leads to the bifurcation of salt marsh platforms from tidal flats, leading to the formation of scarps (Mariotti and Fagherazzi 2010, DOI: 10.1029/2009JF001326). The TIP method therefore hinges only on the existence of a scarp and its on its representation on a DEM. The method does not depend on other morphological features save the absence of a very large river channel in the tidal flat.

In the revision we will explore marshes that are likely to be at the limits of the TIP method's ability to detect marshes and will summarise for the reader the metrics that limit the method's accuracy, as suggested by the reviewer. We propose to test our method on the Wax Lake Delta, LA, a marsh with very low relief, and the Plum Island marsh, MA, a site heavily influenced by human activity. We find that the method can detect the marsh platform successfully in both environments (see Figs 1 and 2).

1.2 Suggestion 2

describe in more details the 6 study sites considered in this research underlying the specific peculiar morphological characteristics. This will allow the user/reader to decide if the methodology may be applied to a different study site. Moreover, the authors refer to a 20 cm value to be subtracted to define the minimum local elevation for a platform pixel (pag. 7 lines 7-8). Also in this case a more precise explanation should be included so that the reader can judge if this is a value typical of the considered study sites or can be generalized.

In the revision we will add more text on the sites and included a more precise description of the 20 cm value. In addition, in reference to the previous comment, we will add additional sites in the appendix. Our test of the method on the Wax Lake Delta marsh (Figure 1) shows that in very low relief landscapes, this value of 20 cm may not be suitable (see more discussion on this below). We will add some text to our discussion to suggest that users estimate the relief variability in their DEM and use this to select an appropriate value for this parameter.

2 Specific comments

Pag. 3 lines 20-25: in the text I do not see a description of the gray area in Fig. 3a.
The grey area in Fig3a corresponds to the values of P^* to be excluded from the initial search space. This will be added in the text.

Pag 7 lines 7-10: Is the value 20cm applied to all the study sites? Could you please better explain how this specific value has been selected? is there a relation with the tidal excursion for example? Is this value specific for the English study sites?

The value of 20 cm was chosen to ensure that cells that are slightly lower than 'marsh' cells but that have been identified as being closer to a 'marsh' cell than a 'scarp' cell are not excluded. This serves to account for terrain roughness (as opposed to smaller scale vegetation-induced roughness) and the value of 20 cm was chosen as a large buffer for elevation errors in the DEM. Though it is not directly directed to tidal forcing, it is linked to the maximum relief of the landscape and we will be clearer about this in the revision. We have tested the method on a very low relief landscape, the Wax Lake Delta in Louisiana (Figure 1), and indeed this 20 cm value needs to be reduced in low relief landscapes. We will include further analysis of this metric in the revision.

Figure 12: the faded lines are difficult to see
In the revision we will replace the faded lines with a different colour and increase the transparency of the bright lines.

3 Additional sites

In response to the comments of both Reviewer 1 and Reviewer 2, we applied the TIP method to two well-known salt marsh environments in the USA. The site of Plum Island (Figure 2) was chosen as an example of a marsh impacted by human activity, as reflected by the linear ditches. It also displays a strongly pooled marsh surface on the south-eastern corner, which the TIP method partially classifies as marsh surface. The site of Wax Lake Delta was chosen as an example of an accreting marsh with very low relief. We note, after the suggestion of reviewer 2, that the 20cm buffer used when filling the platform does not yield satisfying results on a very low relief landscape. Reducing this value to 5cm yields better coverage of the marsh, shown in (1). This suggests that the TIP method would benefit from linking relief of the landscape to this buffer value.

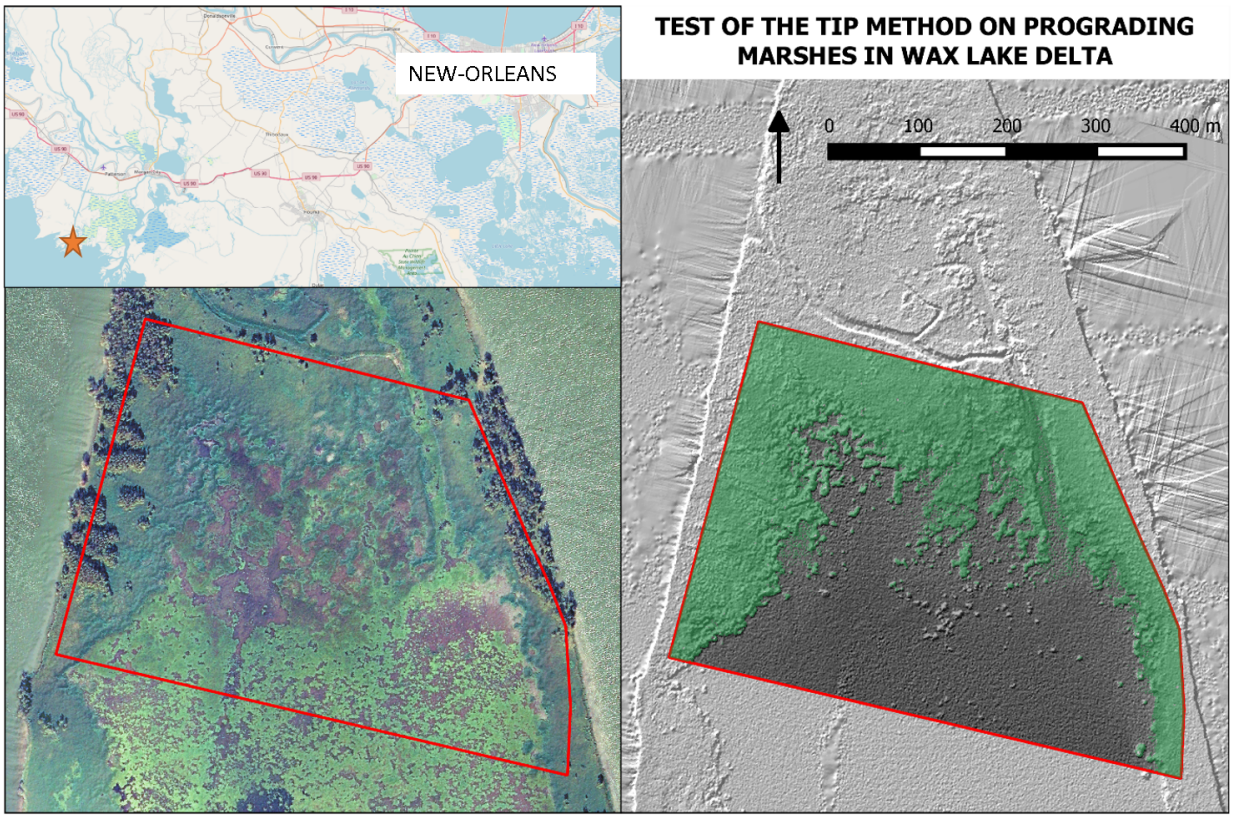

Figure 1: *Hillshade and RGB orthophotography of a portion of Wax Lake Delta marsh, LA (left). Bright green patches are likely to be pondweed or duckweed, and are not considered part of the marsh emergent platform. The marsh detected by the TIP method is coloured in green (right) over a DEM layer (lighter colours indicate higher elevation). (Parameters:* Sp_{thresh}*=-2.0,* ZK_{thresh}*=0.85,* rz_{thresh}*=8)*

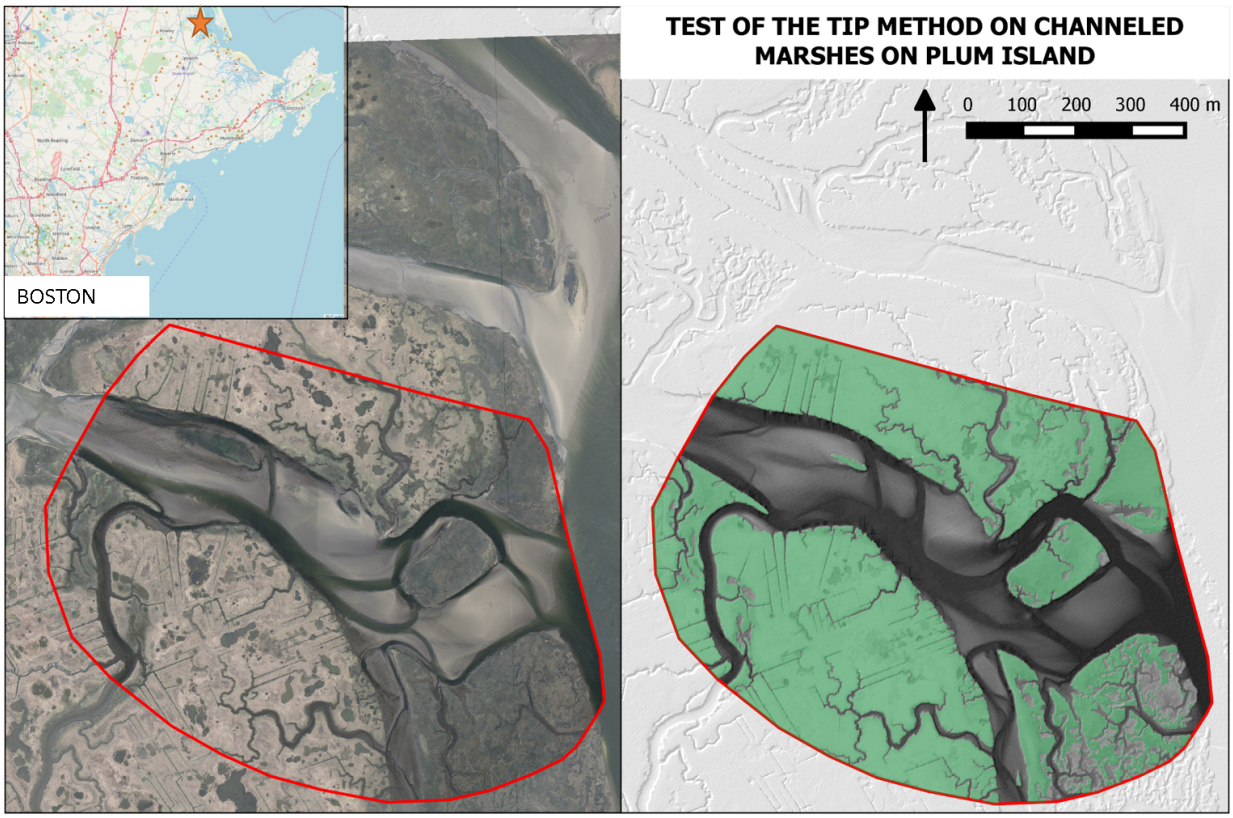

Figure 2: *Hillshade and RGB orthophotography of a portion of Plum Island marsh, MA (left). The marsh detected by the TIP method is coloured in green (right) over a DEM layer (lighter colours indicate higher elevation). (Parameters:* Sp_{thresh}*=-2.0,* ZK_{thresh}*=0.55,* rz_{thresh}*=4)*