

## ***Interactive comment on “Analysis of ice shelf flexure and its InSAR representation in the grounding zone of the Southern McMurdo Ice Shelf” by Wolfgang Rack et al.***

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We also thank the second reviewer for the positive comments. We followed most of the suggestions as described below.

Figure 1: changed accordingly;

Page 4, line 20: We solved for all tidal constituents which satisfied a Rayleigh criteria of 2. For time series with durations less than 182 days we separated constituents with similar frequencies using amplitude and phase relationships derived from Scott Base tide gauge ~50km away. This is now clarified in the text. We also added to additional references.

C1

Page 5, line 9: we reworded this sentence;

Figure 2: the figure was changed to a double y-axis plot as suggested;

Page 6: We didn't change the sequence and numbering of the figures, as we refer here only to a small detail and sub-plot of the Figure presented later. To make this clearer, however, we changed 'Fig. 4' to 'shown as symbols in Fig. 4 c'. See also next comment.

Page 6, line 5: We changed the wording 'Fig. 5' to 'shown in Fig. 5 a'.

Equation 1: We changed the wording of the first paragraph in section 5 according to the reviewer's recommendation.

Page 7, line 17: Many thanks for this comment, as the text was relating to an initially planned figure. We changed the wording in the text and in the figure caption, as the shown surface displacement is integrated from surface strain. We also discovered a mistake in the sign in Figure 4 c and changed this Figure, as the horizontal displacement towards the grounding line is defined as positive. Figure 4c is now consistent with Figure 2.

Page 9 (top): we followed the suggestion and added after line 5 the following sentence 'However, the synchrony of the vertical and horizontal displacement components suggests that on the short tidal timescales the bending response is dominated by elastic behaviour'.

Conclusion: Thank you for this suggestion. We re-arranged the conclusion hoping that the main results are now better highlighted at the end.

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