Response to the Review on the Paper wes-2021-30

Investigation Into Boundary Layer Transition Using Wall-Resolved LES and Modeled Inflow Turbulence

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Review

We appreciate the effort of the reviewer for evaluating our manuscript in detail. In the following his/her remarks are answered and modifications resulting from his/her comments are explained. Note that in the annotated version of the manuscript all modifications (replacements, additions and deletions) regarding the remarks of the reviewer will be highlighted in red.

Response to specific comments:

- **line 200: This deviation is caused by the airfoil geometry not being sufficiently smooth**
  The issue here is not clear, but we believe it may be regarding the clarity of the statement. Therefore, the deviation we refer to has been now clearly described.

- **Figure 4: Please clarify in the caption for which case the figure is (check for other figures whether this would be required).**
  The caption of this figure already includes the relevant case to which it belongs (TI = 1.4 %) and so there was no need to add any further information. All images were checked to ensure the case it belonged to was clear.

- **Section 4.1; Figure 5: The 98 % CDS results have been added to the figure, but are not yet discussed. Can you add this discussion?**

  Around line 440: same as the point above. Please update the discussion to include the new 98 % CDS results.
  The above two points refer to the CDS 98 % case which we included mainly for the grid convergence study. A discussion of the results from the CDS 98 % case are therefore already included in Section 3.2.1 and there is no need to discuss them once again in Section 4.1. A discussion in Section 4.1 would only lead to confusion for the reader as we have stated that all the discussions in the results section refer to the CDS 100 % scheme. Since the plots in Fig. 5 do have the CDS 98 % data as well, a further line in the start of the results section that stresses the fact that a discussion of these has already been done in Section 3.2.1 has now been included. This should prevent any confusion to the reader.

We gratefully acknowledge the effort of the referee and his/her contributions in enhancing the quality of our paper. Thanks a lot.

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