

Interactive comment on “Characteristics of Monsoon inversions over Arabian Sea observed by satellite sounder and reanalysis data sets” by Sanjeev Dwivedi et al.

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General comments

This is a well-written and thorough study of the characteristics of monsoon inversions over the Arabian Sea. The authors make use of a range of remote-sensing measurements validated against available in situ observations and some reanalysis products. I have only a few minor corrections/clarifications before this paper is suitable for publication.

Reply: First of all we wish to thank the reviewer for going through the manuscript

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and appreciating the actual content of the work. We have taken care all the comments/suggestions made by the three reviewers.

Specific comments

1) Page 35288 lines 14-15: "...somewhat varying strengths..." - and heights, at least of the inversion base, though the top height is quite consistent.

Reply: We are modifying this sentence as suggested by referee as –A clear MI in the satellite profile and ERA-Interim can be noticed though with somewhat varying strengths and base of inversion height. However, the top height of inversion is consistent.

2) Page 35290 lines 4-11: You should also mention the low level vertical wind shear which is prevalent in this region, particularly near the coast.

Reply: We mentioned low level vertical wind shear as suggested in the revised manuscript.

3) Fig. 3 - is this a percentage of DAYS with a MI present or a percentage of the profiles measured that had a MI? Please specify in the figure caption.

Reply: Yes, in the figure 3, the MIs shown are as percentage of Days. Caption is modified to:.....(d) August andPercentage occurrence of MI days (e) July

4) Page 35294 lines 8-9: How do you reach the conclusion that IASI "performs better" than AIRS? I can't see how you judge this from the information you have provided. Please clarify.

Reply: We are modifying a few sentences in the manuscript (Page 35294, lines 5 - 9) as follows: A distinct contrast between WAS and EAS with higher PO in the former region can be noticed. When we consider EAS as a place to detect MI, AIRS observed always higher PO than IASI and almost nothing is noticed in ERA Interim. Thus, we may infer

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that IASI is performing better than AIRS for detecting MI (as ERA is in better agreement with IASI rather than with AIRS).

5) Page 35293 line 11: "...less value of..." replace with "a lower value of"

Reply: Complied with in the text.

—END—

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 35277, 2015.

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