The paper presents the evaluation of regional meteorology-chemistry models taking part in the AQMEII experiment using observations from the ESA Cloud_cci project in order to specifically evaluate how the different models represent cloud variables (cloud fraction, cloud optical depth, cloud liquid water path, cloud ice path). The comparison provides with interesting results regarding the models' performances and their ability to correctly simulate cloud properties. However the paper has major limitations as described in detail below. Therefore, I would recommend publication only if major changes are made.

Major comments

1) The text is too long, descriptive and vague, it presents problems in tis structure and many times it does not flow well. The abstract needs to be re-written (see comment below). The introduction is too descriptive and the reader is getting lost in the mass of information that is not needed to be mentioned. Its paragpraph looses its content and purpose. The first paragraph of the introduction (page2, lines 1-20) is too vague and general. Then in the following parts in the introduction the authors describe in detail the references in other works. There is no need to to describe each reference's work but only what is relevant to the present study. Also the introduction misses the presentation of the contents of the paper that should be placed at the end of the introduction. In general I would suggest that the revision by a person with English as a first language would significantly improve the text quality.

2) The abstract needs also to be re-written. It is not clear through the abstract to the reader what the paper is about. The authors mention in the abstract and throughout the text the evaluation of aerosol-radiation and aerosol cloud interactions. In my opinion this is deriving through the comparison of cloud properties in the models that include ARI and ACI interactions, so the evaluation of ARI and ACI is an impact of the present study but not the principal work and for that reason it should not be presented as such. On the contrary the authors should clearly state in the abstract that they evaluate the representation of cloud properties (CF, CWP, CIP, COD).

3) In the methodology part, the use of man absolute error (Figures 2, 5, 7 ,9) adds no additional information in the evaluation study compared to the mean bias and should be omitted. A suggestion that the authors could test and see if they obtain interesting results is to use instead the statistical metric of mean absolute bias that is The authors could maybe instead use the statistical metric of fractional bias that is not affected by the magnitude of the value to be evaluated, as this problem is mentioned many times in the text.

Specific minor comments

1) page 1, line 2: "The effect of atmospheric aerosols.." please precise the effect where?

2) page 1, line 2: "The evaluated simulations run". Delete are

3) page 1, line 8 : I suggest that you use here and in all the text CF for cloud fraction (instead of CFR), as it is more commonly used in the literature.

4) page 1, line 8: An underestimation by what? You could add by the model.

5) page 1, lines 9-10: over the whole domain. Please precise which domain.

6) page 1, lines 11-14: Need to be re-writtem in better English.

7) page 2, lines 1-2: I suggest that you delete the sentence "The study … climate science" as it is very generic and vague.

8) page 2, line 27: I would suggest that you replace : "By using observations and modeling, Avey et al. (2007) combined cloud retrievals..."

9) page 2, line 31: Add in the beginning of the sentence “They found that where the transport model...”
10) page 3, lines 25-26: Replace with : “is demanded, both at global and regional scales”. And then “Particularly, ACI is still considered one of the most...”
11) page 4, lines 1-2: No need to mention the exact content of the work of Brunner et al., (2015).
12) page 4, lines 6-11: This paragraph repeats things already written. Instead you could present the contents of the paper.
13) page 4, line 20: Replace with “covers the year 2010”.
14) page 4, line 24: Replace the sentence “According to..’ with “LOTOS-EUROS is a semi-column...”.
15) page 4, line 31: No need for Table 2, as it is clearly described in the text.
16) page 5, line 10 : (and throughout the text) the word “data” should be treated as plural. The data are…
17) page 5, lines 13-14: Delete “of which” and rephrase the sentence.
18) page 5, line 18: Delete “Latitude/Longitude”.
19) page 5, lines 20-24: No need to refer to the exact bugs fixed in the dataset.
20) page 5, line 27: Replace with “For the valuation of cloud variables”.
21) page 5, line 28: Replace with “we use several statistical metrics”
22) page 5, lines 30-31: Delete the last sentence. No need to add this information.
23) page 6, lines 15-19: The paragraph is not at all understood, it needs to be rephrased.
24) page 7, line 2: Add “All the figures of the present study have the..”
25) page 7, line 6: The sentence needs to be rephrased.
26) page 7, first paragraph: In the Section 3 it is useful to precise the limits of the study area.
27) page 7, line 15: ‘to over -35%” Please precise where, for example over the study region.
28) page 7, lines 22-24: The sentence indicates that there is a problem in the dataset, so the data that are considered as a reference for the evaluation are not trustworthy? This creates an important rpoblem to the study and needs to be considered.
29) page 8, line 1: Add in the sentence “This spatial pattern is clear in the COD bias...”
30) page 8, lines 3-5: Give some precise numbers to justify the conclusions.
31) page 8, line 9 : You mention in the beginning of the sentence ‘The authors..” Please precise which authors?
32) page 8, line 34: Replace with “whereas UK4 considers only one.
33) page 9, line 7: Replace with “Positive correlations are practically found in the entire...”
34) page 9, line 10: and throughout the text: you refer to the word levels and you mean the CWP values. Using the word levels is confusing as it is usually used for the atmospheric vertical levels in the literature.
35) page 9, line 11: Delete ‘can be found”
36) page 9, line 20: Replace “the variable” with “the CWP in the model”.
37) page 9, lines 23-24: Please rephrase the sentence.
38) page 10, lines 21-24: Give some numbers to be more precise.
39) page 10, line 26: “must be well represented”. Precise where?
40) page 11,lines 7-9: The sentence needs to be rephrased.
41) page 11, line 29: You refer to mean satellite data. Please be more precise by declaring tha data of which variable.
42) page 12, lines 23-29: This paragraph presents to vague conclusions and does not merit a position in the study. Instead you could mention for example how the study offers to the scientific community by searching and applying model improvements in the direction highlighted in the study.
43) page 19, Figure 1: Replace with : “First row represents the mean satellite values of 2010 (first column), JFM (second column)….” Also precise in the title which models : DE4 second row, ES1 third column etc…
44) pages 20-27: The other figures titles should be like : Same as Fig. 1 for the COD. Etc..

45) page 30: Please precise in the legend of Table 3 the exact domain.