Authors: We would like to thank the anonymous referee for his/her interest and the comments on our manuscript. Bellow we provide a point by point answer to the issues raised by referee #3.

Ref.3: The paper presents an approach to downscale ERA5 reanalysis by using MODIS fSCA information. Even though the approach is not completely innovative, the research has a high relevance for the application in arid areas. Below detailed comments.

Ref.3: p.3 line 107:please provide here a clear statement about the objectives of the work and the innova-tive part with respect to the current literature.

Authors: We have added the following sentence to the text:
"The objectives here are: i) to explore the potential of a methodology to develop a snowpack reanalysis over data scarce regions and ii) to describe the main snowpack dynamics over the Lebanese mountains being the first use of ICAR for this approach"

Ref.3: Section 3.2.1. More detailed information about the processing of MODIS data need to be introduced here. Please add the new adapted linear function that the authors found by using Theia data and the explanation why it differs from the Salomonson&Appel2004.

Authors: The equation of the linear fit is fSCA [%] = 1.23 x NDSI + 23.48. It differs from the equation of Salomonson and Appel (2004) because the calibration site is different. Salomonson and Appel (2004) obtained their relationship using Landsat-derived fSCA over Alaska, Labrador, and Siberia.

Ref.3: How were MOD and MYD images merged? is there a cloud gap filling procedure? If the use of MYD produces a higher error why do not use only MOD?

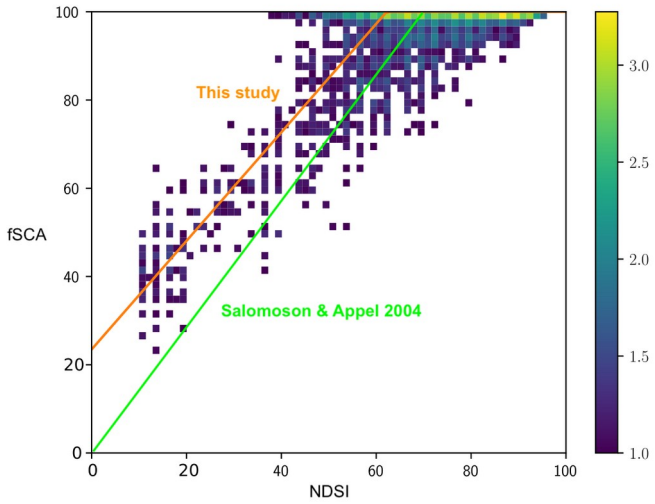
Authors: In fact this is what we did (see line 230).

Ref.3: Was a validation with ground measurements conducted? this can provide an independent source of information to better quantify the accuracy of the new proposed linear relationship.

Authors: The scarce snow depth data are already used in the other section of the manuscript. Theia Sentinel-2 snow products were extensively evaluated by Gascoin et al. (2019). For example, the comparison with automatic snow depth measurements in the Alps and Pyrenees showed that the accuracy (proportion of correct classifications) was 94 % and the kappa coefficient was 0.83.

Ref.3: Moreover in the validation, a comparison of the new linear relationship with the one proposed by Salomonson&Appel2004is advisable to understand the advantage of the new approach.

Authors: With the Salomonson and Appel (2004) equation we find slightly larger mean absolute error (6.2% vs 5.7%) and RMSE (12% vs. 11%) (figure below)



p.9, line 320: as the density can change during the season, please justify the use of the value.

Authors: It is true that density varies during the season. However, we had to use a fixed density value to compare the ICAR snow outputs with the snow depth observations at the AWS. Fayad et al., 2017a showed that such value is the mean density of the snowpack in the area. We showed the uncertainity caused by this value with a sensitivity analysis in Fig. 4