GENERAL COMMENTS

This paper analyses the changes in snow water equivalent (SWE) over the Northern Hemisphere continents during three periods of the 21st century (2016-2035 ; 2046-2065 and 2080-2099), using data provided by CMIP5 models for the three scenarios RCP2.6, RCP4.5 and RCP8.5. It focuses on the link between SWE changes and the global changes of temperature and precipitation.

A lot of revisions have been made compared to the previous version of the manuscript, and it has been really improved.

The objectives of this study are clearly described in the introduction, and a great effort has been done to explain the methods in section 2.

Some parts of section 4 should be clarified (see specific comments), but I suggest to accept this manuscript with minor revisions.

SPECIFIC COMMENTS

- p12, line 21 : « temperature increases more rapidly in the 50–60°N latitude band than in other areas ». No, temperature increases more rapidly in the high latitudes (60-80°N).
- p12, lines 24-25 : « a greater increase in precipitation occurs in tropical and high-latitude regions during the EP, MP and LP for all three RCPs».
  In high-lalitudes region, precipitation (relative and absolute values) increases
  In low-latitude regions, the relative change of precipitation increases, but the absolute precipitation is very regionally dependant…
- p14, line 30 : What do you mean by « decreasing SWE will likely lead to acceleration of the hydrologic cycle » ?
- p16, line 15 : «the most significant changes in SWE will occur at mid to high latitudes during winter and spring (not shown)» In contradiction with Figure 4 : at mid latitudes, the relative changes in SWE are lower than at low or high latitudes. This sentence should be clarified and developped, or deleted.
- p17, lines 18-28 and Figure 5 : It may be more relevant to plot the difference $DSWE=SWE_{\_RP} – SWE_{\_RCP}$ (done in the previous version of the manuscript), because it seems that DSWE is greater in spring than in summer, whereas the relative change in SWE is greater in summer (when the snow extend is smaller and the snow pack thinner).
- p18, lines 7-9 : I do not understand this statement. The temperature increase is significant for all lalitudes, and it is particulary strong at high latitudes (polar amplification).

- p18, line 18 : What do you mean by « precipitation » ? Solid+liquid precipitation ?
- p18, lines 18-20 : for RCP2.6 changes in precipitation are quite similar during winter and summer.
- p19, lines 14-17 : it is very difficult to conclude something for low emission scenario during the MP and LP because a lot of data do not exceed the 95% significant test.
- p19, lines 17-20 : delete this comment if you don't want to show the figure (Figure 7 in the previous version of the manuscript)
- p22, line 17 : How have been computed this trends ? over 100years ? over the last 10 years of the 21st century ?
- p22, l22 : you could add the reference to (Brutel-Vuilmet et al., 2013)
- p22, lines 25-30 : delete this comment if you don't want to show the figure (Figure 7 in the previous version of the manuscript)
- p23, line 6 : « largest reduction in SWE appears in summer ». Ok for the relative change in SWE. But DSWE is higher in spring.
- p23, line10 : strong negative correlation with temperature, and weak (positive ?) correlation precipitation.
- P25, lines 4-18 and Figure 8 : It seems that the SWE curve follows the solid precipition curve in winter and spring. So, It is maybe more interresting to study the correlation between SWE and solid precipitation ? (Table 4, Figures 4&6). Moreover, the precipitation changes are very regionally dependant, so the region analyse should be more relevant...

- Table 3 :
    - Trends are greater for spring, which is consistant with my previous comment.
    - Trends for RCP4.5 are < -1,09 kg m^{-2}/10a for every season, ans the mean value is = -1,09 kg m^{-2}/10a. Should be an error, no ?
    - For which period are computed the trends ? 2006-2099 ?
- Table 4 :
    - The data may be more relevant if computed by seasons (as in Table 3) than by months.
    - What do you mean by Precipitation ? Solid+liquid precipitation ?

- Figure. 4 : Could you explain why the temperature curves are differents too the temperature curves presented in the previous version of your manuscript?
- Figure. 6 : Could you explain why the temperature curves are differents too the temperature curves presented in the previous version of your manuscript?

TECHNICAL COMMENTS

- p4, lines 13-14-15 : this sentence is written 2 times
- p27, line 27 : « uncertainty » should be « uncertainties »
- Caption of Figure 2 : « models listed in Figure 1 ». should be « in Table 1»
- Table 2 : « S » and « C » should be « Slop » and « Cor » in the table. Could you indicate the slop unit ?
- Figure. 4 : What do you mean by « Precipitation (%)» ?
    - Solid, Liquid, or Solid+Liquid precipitation ?
    - Relative change or Absolute mean annual precipitation ?
- Use the same referencing for figures and tables all over the manuscript. Fig.N or Figure N.