General comments：

Radon has previously been used to study vertical mixing in the atmosphere, This research paper developed a new analysis method of radon indicator to quantify the Surface-to-mountaintop transport at Jungfraujoch. Comparing to the existing indicators of other atmospheric compositions, this method of Radon indicator could better detect the presence of anabatic winds with a radon threshold for the atmospheric background condition and be used to improve he aerosol scavenging scheme. As an excellent manuscript, it could be published in the ACP after a minor revision as follows:

Specific comments：

1）in Sect. 2.4.1: the method is for anabatic mountain winds, how are non-anabatic winds recognized? Please clarify it and give more interpretation on Fig. 2

2）also in Sect. 2.4.1, a run with the steps 5 and 6 could loss an input set for a diurnal composite, which cloud lead to an inaccurate estimation and the higher radon level in the last period in Fig. 3.

3）Why are the diurnal changes in radon at Bern so high in Fig. 5? Which impact could the diurnal changes at Bern exert the estimations of anabatic winds?

4）The Sects of 3.4 and 3.5 are a little beyond the topics of manuscript. Please shorten them.

Editorial corrections：

P18085, line 15, please delete “to”

1） P18085, line 22, change “The three” to “Three”

2） P18086, line27, change “months they” to “months, they”

3） P18087,line 28, change “towers” to” , towers”

4） P18088,line 4, change “(Zahorowski et al., 2004)” to “Zahorowski et al.(2004)”

5） P18090, line 1, please clarify the “23 pressure levels (6 between 1000–850 hPa)”

6） P18090, line 19, please change “constraints” to “constraint”

7） P18094, line 6, please delete the repeating “direction”

8） P18096, line 4, change “there” to “those”

Not all. Please edit the manuscript carefully to correct the English usage.