Referee comment on "Diurnal cycles of cloud cover and its vertical distribution over the Tibetan Plateau revealed by satellite observations, reanalysis datasets and CMIP6 outputs" by Yuxin Zhao et al., Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2022-258-RC3, 2022

This manuscript reports a study for the diurnal variations of total cloud cover, cloud vertical distribution, and cirrus clouds and their relationship to meteorological factors over the Tibetan Plateau (TP) based on active and passive satellite observations, reanalysis data, and CMIP6 outputs. The diurnal variation and vertical distribution of clouds affect the radiation budget very much but very few studies have been conducted in this field. In this work, the authors studied the clouds variations, especially the diurnal cover change, with different datasets, most importantly with lidar data, which can detect super-thin clouds that other passive instruments cannot find. The topic is of significance. The data and method they use show no apparent problem. English is good and may only needs a little improvement. Only major suggestion is that the authors need qualitively/quantitatively address in the Conclusion and Abstract what effect this research can have on climate modeling/local climate/weather.

This reviewer recommends it be accepted for publication after minor corrections.