Firstly, Calculate the corresponding satellite zenith angle and satellite azimuth angle based on the latitude and longitude of the site, which will be used in **cda\_pixel** function.

Secondly, Determine the surface type of the site. We mainly set up two types of surface types for photovoltaic plants: **land** and **desert** surface. Different surface types have different albedos, which can affect cloud detection.

Thirdly, set cloud detection parameters (dlh20, dl11\_12hi, dl11\_4lo, dlref1, dlvrat). The parameters corresponding to each site may vary and need to be adjusted to achieve the best cloud detection effect.

(All parameters used in this manuscript are in the **Parameter** file)