Week7_hulinxue

Task 1** **Provide a summary of the main concepts that went through about solar radiation**

Solar radiation means that the sun transmits energy in the form of electromagnetic waves.
Solar radiation entering the Earth's atmosphere is absorbed and scattered by atmospheric gases, clouds, and the Earth's surface. The absorbed radiation is added directly to the heat budget; whereas the scattered radiation is partly returned to space and partly continues its path through the Earth–atmosphere system where it is subject to further scattering and absorption.

Solar radiation absorbed by any surface is given by the product of how much solar energy is incident on that surface, depending on the direction of the Sun and the orientation of the surface relative to this direction, and the fraction of that incident radiation that is absorbed.

The amount of solar radiation absorbed at the surface determines in large part the climate over land and climate in general. On average for the Earth, it is in nighttime half the time, and during daytime, on average, the angle formed between a vertical line from the surface of the Earth and the Sun is 60°. Consequently, the daytime average sunlight received at the top of the atmosphere is half of that which a point receives when the Sun is directly overhead, and the day–night average is a quarter of that received from an overhead Sun. Solar radiation at the surface is additionally affected by greater removal of radiation by the atmosphere when the Sun is closer to the horizon. These geometric factors reduce the solar radiation received in high latitudes and in winter, and enhance the solar radiation received in the tropics and in summer, hence largely determining the seasonal and geographic variations of climate.