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How different segments
in atmosphere are maintaining
Earth's radiation balance?

Earth's atmosphere and Radiation balance:

Earth's atmosphere is an envelop
of naturally existing gases
surrounding its surface. It is
divided into different segments,
with each contributing to Earth's
radiation balance.

Troposphere:

Troposphere is the most
significant layer as it absorbs
or re-emits radiation to keep
the temperature and climate of
Earth suitable for living.

a. Shortwaves coming from the
Sun are either absorbed or
reflected by this segment.

Clouds in this layer reflect the
radiation, causing albedo effect.

b. The remaining energy is either
absorbed by Earth's atmosphere
or surface. The surface of
the earth re-emits energy in
the form of infrared rays, which
are then absorbed by greenhouse

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gases to keep the Earth warmer.

The amount of energy absorbed is equal to amount of energy reflected/released to keep the climate suitable for living.

Stratosphere, Mesosphere and

Thermosphere:

These layers contribute a little in Earth's radiation balance.

a. Stratosphere protects the earth's surface from harmful UV rays.

b. Mesosphere prevents the surface from being hit by meteoroids which may affect surface's temperature over geological scale of time.

c. Thermosphere prevents the extreme UV rays from reaching Earth's surface.

Processes involved in radiation balance.

