Tropopause Encyclopedia Article

Tropopause

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Contents

Tropopause Encyclopedia Article.....1

Contents.....2

Tropopause.....3

Tropopause

The tropopause is the upper boundary of the **troposphere**, a layer of the earth's **atmosphere** near the ground. In the troposphere, the temperature generally decreases with increasing altitude, with restricted exceptions called inversions. However, at a height of about 6 mi (10 km) at the poles 9 mi (15 km) at the equator, the temperature abruptly becomes constant with increasing altitude. This isothermal region is called the **stratosphere**, and the interface between it and the troposphere is called the tropopause. Mixing of air across the tropopause is slow, occurring on a time scale of weeks on the average, while tropospheric mixing is more rapid.

The existence of the stratosphere is largely caused by the **absorption** of **solar energy**, mostly ultraviolet light, by oxygen to form **ozone**. The balance of the heating is caused by absorption of other parts of the solar spectrum by other trace gases.

See Also

Ultraviolet Radiation