

Transient property of the atmospheric radiation and effective radiation distance

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The transient property of the atmospheric radiation is discussed. For a given disturbance in the atmospheric temperature, the relaxation time of disturbances is obtained. The results shows that there is a optimal scale for a given absorption rate and the radiation is less effective for other scales.

This indicates that the thermal radiation in the band longer than the atmospheric window is very effective for the thermal balance in the atmospheric boundary layer.

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