

PECULIARITIES OF WATER DROPLET
EVAPORATION AT A CONSTANT
TEMPERATURE

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S u m m a r y

We have analyzed the experimental data on evaporation of water droplets in a wide range of pressure (760—15 mm Hg) at a constant temperature. It is shown that, at pressure lower than 100 mm Hg (in the so-called transient regime of evaporation), formulas of the conventional theory depart from the experimental data. These departures increase with decreasing in pressure. We have found that, in the transient evaporation regime, the condensation coefficient of water α of a water droplet depends on its radius r according to the phenomenological relation $r \cdot \alpha = \text{const}$. We have proposed a formula for the water droplet evaporation rate at a constant temperature that describes the experimental data in the entire range of pressure, even at low pressures where the conventional theory does not correspond to the experimental data.