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Evaporation of thin liquid droplets on heated surfaces: theory versus experiment CHRISTOF SODTKE, TU Darmstadt, Germany, VLADIMIR AJAEV, Southern Methodist University, PETER STEPHAN, TU Darmstadt, Germany — We carry out combined experimental and theoretical studies of liquid droplets on heated surfaces in a closed container filled with saturated vapor. The droplets are deposited on an electrically heated stainless steel foil. Evolution of droplet shapes is studied by optical methods simultaneously with high resolution temperature measurements using thermochromic liquid crystals (TLCs). A mathematical model is developed based on the assumption of liquid droplet thickness being much smaller than its radius. Both the dynamics of liquid-vapor interface and the temperature profiles in the foil are shown to be in good agreement with the experimental data.

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