

ESTIMATION OF FLUID VISCOSITY BY THE STOKES METHOD

Name:

Group:

Date:

1. Goal of the experiment:

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2. Experimental data:

a) ball diameter:

$$D \pm \Delta D = \dots\dots\dots$$

b) ball radius

$$r \pm \Delta r = \dots\dots\dots$$

c) density of liquid:

$$d_l \pm \Delta d_l = \dots\dots\dots$$

d) density of ball material:

$$d \pm \Delta d = \dots\dots\dots$$

e) distance l of ball falling:

$$l \pm \Delta l = \dots\dots\dots$$

3. Estimation of the mean time \bar{t} of ball falling and its error $\Delta \bar{t}$:

temperature		1	2	3	4	5	6	7	8	9	10
$T_1 = \dots\dots\dots$	time of falling, s										
$T_2 = \dots\dots\dots$	time of falling, s										

Mean value of the ball falling time at temperature T_1 :

$$\bar{t} = \dots\dots\dots$$

Standard deviation of the mean:

$$s_{\bar{t}} = \dots\dots\dots$$

Maximal error of the ball falling time #1

$$\Delta \bar{t} = 3s_{\bar{t}} = \dots\dots\dots$$

Mean value of the ball falling time at temperature T_2 :

$$\bar{t} = \dots\dots\dots$$

Standard deviation of the mean:

$$s_{\bar{t}} = \dots\dots\dots$$

Maximal error of the ball falling time #2

$$\Delta \bar{t} = 3s_{\bar{t}} = \dots\dots\dots$$

