

## Лабораторная работа № 2м.2

Расчетные формулы и формулы для вычисления погрешностей:

$$I = \frac{m\tau(gt_1^2 - 2h)d^2}{8h(t_1 + \tau)}, \quad I_\tau = I_1 + 4m'\ell^2,$$

$$\varepsilon_I = \left| \frac{1}{m} \right| \Delta m + \left| \frac{1}{\tau} - \frac{1}{t_1 + \tau} \right| \Delta \tau + \left| \frac{2gt_1}{gt_1^2 - 2h} - \frac{1}{t_1 + \tau} \right| \Delta t_1 + \left| \frac{-2}{gt_1^2 - 2h} - \frac{1}{h} \right| \Delta h + \left| \frac{2}{d} \right| \Delta d, \quad \Delta I = \varepsilon_I \cdot I.$$

Таблица 1

|     | $m,$ | $\Delta m,$<br>$10^{-3}$ кг | $d,$ | $\Delta d,$<br>$10^{-3}$ м | $h,$ | $\Delta h,$<br>$10^{-2}$ м | $t_1,$ | $\Delta t_1,$<br>с | $\tau,$ | $\Delta \tau,$<br>с | $I,$ | $\Delta I,$ | $\varepsilon_I,$<br>% |
|-----|------|-----------------------------|------|----------------------------|------|----------------------------|--------|--------------------|---------|---------------------|------|-------------|-----------------------|
| 1.  |      | —                           |      | —                          |      | —                          |        | —                  |         | —                   | —    | —           | —                     |
| 2.  |      |                             |      |                            |      |                            |        |                    |         |                     |      |             |                       |
| 3.  |      |                             |      |                            |      |                            |        |                    |         |                     |      |             |                       |
| ср. |      | 0,5                         |      | 0,05                       |      | 0,5                        |        | 0,1                |         | 0,1                 |      |             |                       |
| 1.  |      | —                           |      | —                          |      | —                          |        | —                  |         | —                   | —    | —           | —                     |
| 2.  |      |                             |      |                            |      |                            |        |                    |         |                     |      |             |                       |
| 3.  |      |                             |      |                            |      |                            |        |                    |         |                     |      |             |                       |
| ср. |      | 0,5                         |      | 0,05                       |      | 0,5                        |        | 0,1                |         | 0,1                 |      |             |                       |

Таблица 2

|     | $m,$ | $\Delta m,$<br>$10^{-3}$ кг | $d,$ | $\Delta d,$<br>$10^{-3}$ м | $h,$ | $\Delta h,$<br>$10^{-2}$ м | $t_1,$ | $\Delta t_1,$<br>с | $\tau,$ | $\Delta \tau,$<br>с | $I,$ | $\Delta I,$ | $\varepsilon_I,$<br>% | $I_1,$ | $\ell,$ | $m',$ | $I_\tau,$ |
|-----|------|-----------------------------|------|----------------------------|------|----------------------------|--------|--------------------|---------|---------------------|------|-------------|-----------------------|--------|---------|-------|-----------|
| 1.  |      | —                           |      | —                          |      | —                          |        | —                  |         | —                   | —    | —           | —                     | —      |         |       | —         |
| 2.  |      |                             |      |                            |      |                            |        |                    |         |                     |      |             |                       |        |         |       |           |
| 3.  |      |                             |      |                            |      |                            |        |                    |         |                     |      |             |                       |        |         |       |           |
| ср. |      | 0,5                         |      | 0,05                       |      | 0,5                        |        | 0,1                |         | 0,1                 |      |             |                       |        |         |       |           |