

MECHANICAL PROPERTIES OF SOLIDS (ESTIMATION OF YOUNG'S MODULUS)

Name:

Group:

Date:

1. Goal of the experiment:

1. The studied material:

initial length: $l_0 \pm \Delta l_0 =$

diameter of the material $d \pm \Delta d =$

cross section area: $A \pm \Delta A =$

initial marker position: $r_0 \pm \Delta r_0 =$

weight of a single load: $F_0 \pm \Delta F_0 =$

2. Results of measurements of the dependence of the elongation Δl on load F .

	<i>loading</i>					<i>unloading</i>				
	load F	stress σ	marker position r_i	elongation $\Delta l_i = r_i - r_0$	strain ϵ	load F	stress σ	marker position r_i	elongation $\Delta l_i = r_i - r_0$	strain ϵ
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										

Estimated uncertainties of measured quantities:

$\Delta r_i =$

$\Delta(\Delta l) = \Delta r_i + \Delta r_0 =$

$\Delta \sigma =$

$\Delta \epsilon =$

Make a graph $\sigma = f(\epsilon)$ of the stress σ versus strain ϵ .

