Date : / /2024

Lab Report Physique II

Expriment N°1: Resistors measurement

Istructor : Groupe : First and last Name : -

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1. Procedure:

1.1. Upstream method or long derivation:

1. Measures Table :

R(kΩ)	**2**	**4**	**6**	**n8**	**10**
V_{mes} ( )	11,75	11,75	12	12	12,5
Calibers ( )	30	30	30	30	30
ΔV_{mes} ( )					

I_{mes} ( )	4,2	2,6	1,7	1,25	1,05
Calibers ( )	10	10	3	3	3
ΔI_{mes} ( )					

R_{mes} ( )					
ΔR_{mes} ( )					

- Graph plot $R_{mes}=f(R)$ with the uncertainty bars.
- Deduction of r_a : **r_a=…….. ( )**
- Systematic relative uncertainties calculation by the method $|\Delta R/R|$ in % :

R(kΩ)					
$\|\Delta R/R\|$ (%)					

- Result obtained:

1.2. Downstream method or short derivation:

1. Measures Table :

R (kΩ)	**20**	**40**	**60**	**80**	**100**
V_{mes} ( )	12	12	11,75	11,75	12
Calibers ( )	30	30	30	30	30
ΔV_{mes} ( )					

I_{mes} ( )	0,62	0,34	0,25	0,17	0,14
Calibers( )	1	1	0,3	0,3	0,3
ΔI_{mes} ( )					

R_{mes} ( )					
ΔR_{mes} ( )					

$G = \frac{1}{R}$ ($k\Omega^{-1}$)					
$G_{mes} = \frac{1}{R_{mes}}$ ( )					
ΔG_{mes} ( )					

- Graph plot R_{mes}=f(R) $\frac{1}{R_{mes}} = f\left(\frac{1}{R}\right)$ with the uncertainty bars.
- Deduction of r_v : **r_v=……. ( )**
- Method's systematic relative errors calculation $|\Delta R/R|$ in %:

R(kΩ)					
$|\Delta R/R|$ (%)					

- Result obtained:

C/ Comparison of two methods:

- Graphs plot $\left|\frac{\Delta R}{R}\right| = f(R)$, <u>on a new graph and with the same scale.</u>
- Point coordinats du M_0 (R_0, $\left|\frac{\Delta R_0}{R_0}\right|$) : M_0 (……...., ……)
- Conclusions:

1. ...…….....
   ……
2. …….

That is, it for the lab. Put everything back as it was and enjoy your day