

# Lab 4: Resistor Networks

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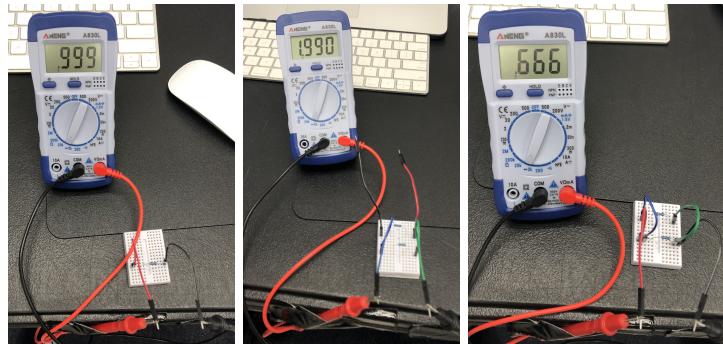
February 24, 2021

## Part 1

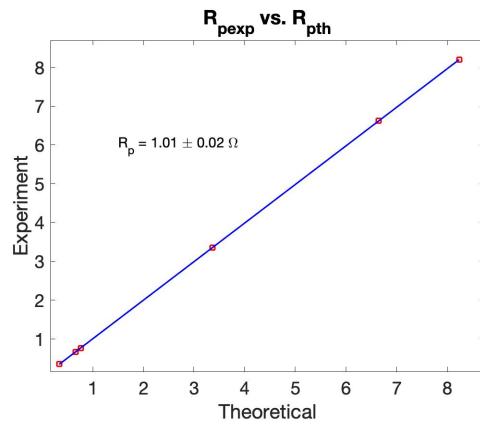
**Table 1: Parallel networks**

$R_{1,\text{th}}(\Omega)$	$R_{1,\text{exp}}(\Omega)$	$R_{2,\text{th}}(\Omega)$	$R_{2,\text{exp}}(\Omega)$	$R_{P,\text{th}}(\Omega)$	$R_{P,\text{exp}}(\Omega)$
1k	0.999	2k	1.990k	0.6651	0.666
1k	0.999	510	0.511	0.3381	0.357
1k	0.999	3.3k	3.290k	0.7663	0.770
10k	9.970k	5.1k	5.070k	3.3609k	3.360k
10k	9.970k	20k	19.940k	6.6467k	6.620k
10k	9.970k	47k	47.400k	8.2374k	8.200k

**Picture:**  $R_{1,\text{exp}}(\Omega)$ ,  $R_{2,\text{exp}}(\Omega)$ ,  $R_{P,\text{exp}}(\Omega)$



## Graph 1



## Discussion 1

1. Discuss how well the experimental values of the parallel networks followed the theoretically expected value and quantify that relation.

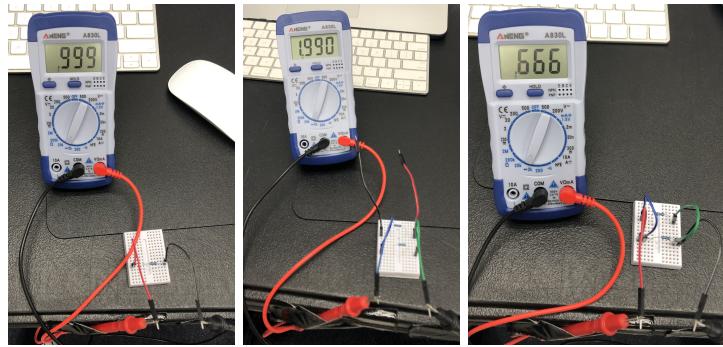
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## Part 2

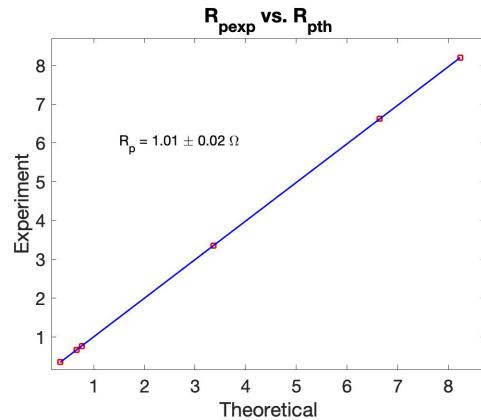
**Table 2: Parallel networks**

$R_{1,\text{th}}(\Omega)$	$R_{1,\text{exp}}(\Omega)$	$R_{2,\text{th}}(\Omega)$	$R_{2,\text{exp}}(\Omega)$	$R_{S,\text{th}}(\Omega)$	$R_{S,\text{exp}}(\Omega)$
1k	0.999	2k	1.990k	2.9890k	
1k	0.999	510	0.511	1.5100k	
1k	0.999	3.3k	3.290k	4.2890k	
10k	9.970k	5.1k	5.070k	15.0400k	
10k	9.970k	20k	19.940k	29.9100k	
10k	9.970k	47k	47.400k	57.3700k	

**Picture:**  $R_{1,\text{exp}}(\Omega)$ ,  $R_{2,\text{exp}}(\Omega)$ ,  $R_{S,\text{exp}}(\Omega)$



**Graph 2**



## Discussion 2

1. Discuss how well the experimental values of the series networks followed the theoretically expected value and quantify that relation.

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