1. laboratorijas darba Vienkru elektrisku shmu modelana atskaite

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Chapter 1

Teortisk daa

1.1 des aprins

Apiniet spriegumus uz rezistoriem 1. attl dotaj shm. Sprieguma avota V1 sprieguma vrtbu U (Voltos) izvlieties daskaitli, kas btu Jsu apliecbas pdjie trs cipari dalti ar 10. Piemram. 101REB123 nozm V1 = 12.3 (Volti), R1 ir apliecbas pdjo 3 ciparu otrais numurs+1, R2 ir apliecbas numura pdjais cipars +1. Piemram, ja Jsu apliecbas numurs ir 101REB123 tad R1=3, R2=4. Nofotografjiet aprinu vai saglabjiet lapiu. Aprina gaita bs nepiecieama darb P02. Turklt, aprins bs jpievieno atskaitei, ko veiksiet semestra beigs. Mans studenta apl.nr.=171REB174, aprinot iegstu sekojoas

Table 1.1: des komponenu vrtbas:

R1	8 Ω
R2	5 Ω
V1	17.4V
Ur2	6.69V
Ur1	10.71V

UR1 un UR2 vrtbas tika aprintas, izmantojot sprieguma daltja formulu.

$$Ur_2 = V_1 * \frac{R_2}{R_1 + R_2} \tag{1.1}$$

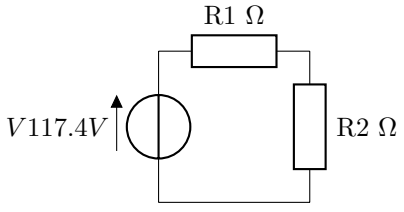
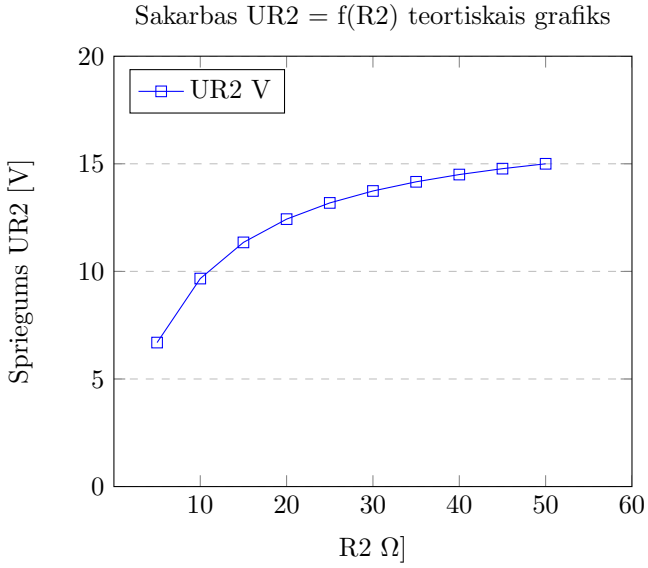


Figure 1.1: Uzdevuma principil shma, veidota ar "circuitikz".

Teortisk U_{R2} atkarba no R_2


Sakarbas UR2 = f(R2) teortiskais grafiks
UR2 V
Spriegums UR2 [V]
R2 Ω]
0
5
10
15
20
10
20
30
40
50
60

Chapter 2

Praktisk daa

2.1 Darbs ar GEDA programmm

2.1.1 darbs ar gschem

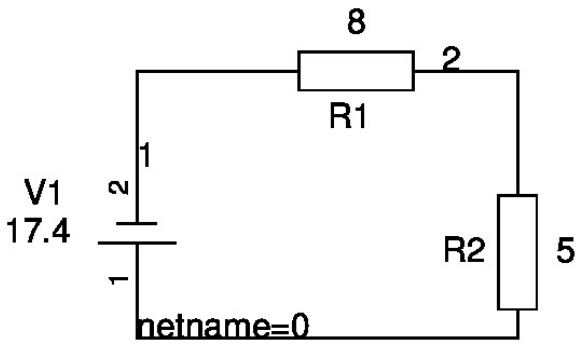


Figure 2.1: attls, ir dota elektrisk shma

2.1.2 darbs ar gnetlist

```
* Spice netlister for gnetlist
V1 0 1 17.4
R2 0 2 5
R1 1 2 8
.END
```

2.1.3 darbs ar ngspice

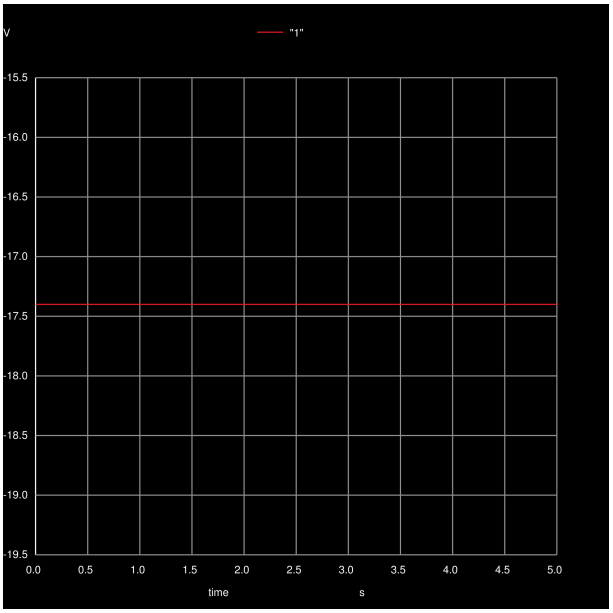


Figure 2.2: attls, Spriegums uz rezistora R1

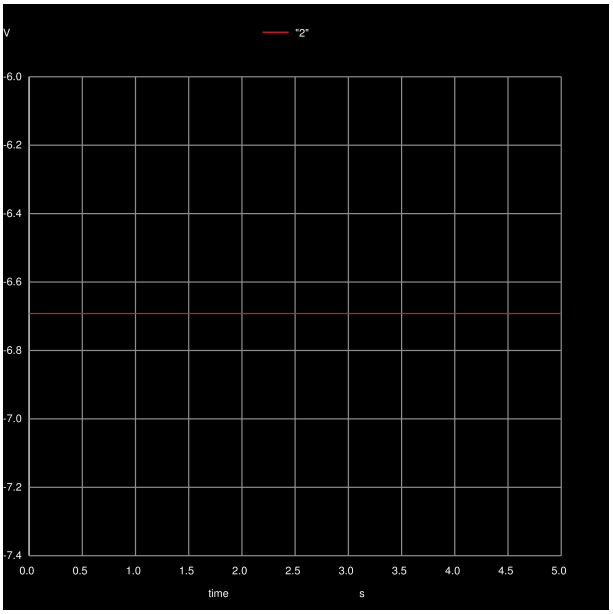


Figure 2.3: attls, Spriegums uz rezistora R2

2.2 Darbs ar QUCS programmm

Linux vid izmantojot QUCS (Quite Universal Circuit Simulator), tika uzzimta attl redzam shma:

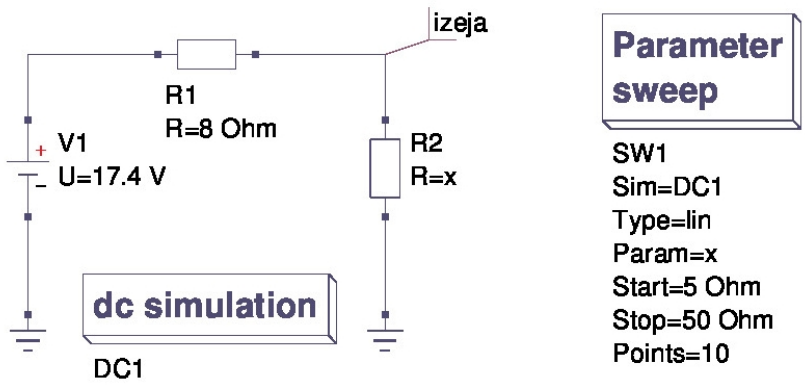


Figure 2.4: attls, QUCS shma

Iesakum tika veikta DC simulcija, pieemot, ka rezistora R2 vrtba ir nemainga = 5 Ohm

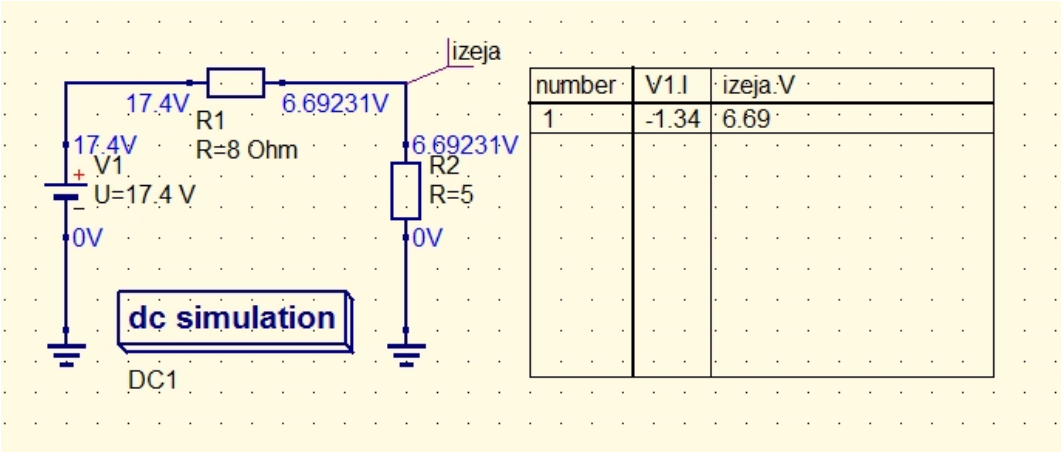
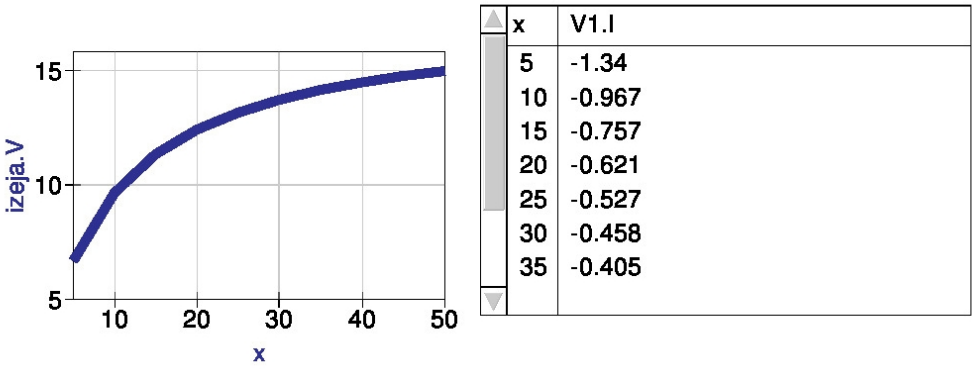


Figure 2.5: attls, QUCS DC simulcija

Shem eso rezistora R2 pretestbas vrtbai tika pieirts parametrs x, kuru DC Sweep simulators mains robes no 5 ldz 50 Ohm ar 10 punktiem, jeb soli - 5 Ohm. Attl redzamais grafiks attlo sakarbu starp spriegumu punkt "Izeja" un Rezistora R2 vrtbu (x).



x	V1.I
5	-1.34
10	-0.967
15	-0.757
20	-0.621
25	-0.527
30	-0.458
35	-0.405

Figure 2.6: attls, QUCS DC sweep simulcija, Sprieguma UR2 atkarba no pretestbas R2

Tabul ir attlots x parametra vrtba Omos un caur "Izeja" plstos strvas stiprums.

Bibliography

[1] Learn LaTeX online: https://www.sharelatex.com/learn

[2] *QUCS FAQ WWW* http://qucs.sourceforge.net/faq.html QUCS Frequently asked Questions