

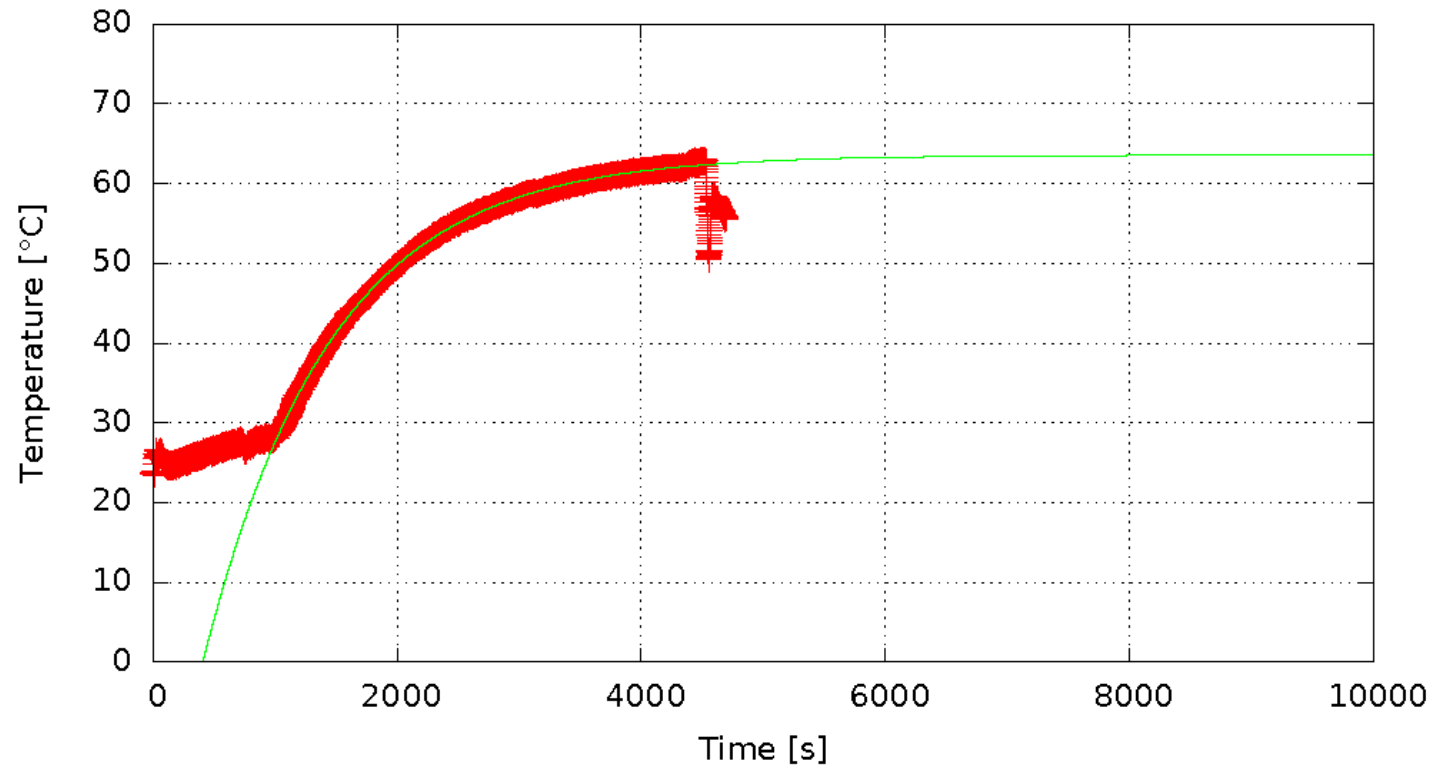
Group B

SO FAR WE'VE BEEN

THE COIL

- We fixed the coil on a wooden plate
 - Radius:
 - Radial width:
 - Width:
 - -> Distance:
- We tested the heating of the coil with high currents (4 Amps)
 - Maximum temperature about 65°C
- Current is stable within 50mA, long term testing still necessary (temperature change negligible at ~4000s)

TEMPERATURE-TIME-CURVE



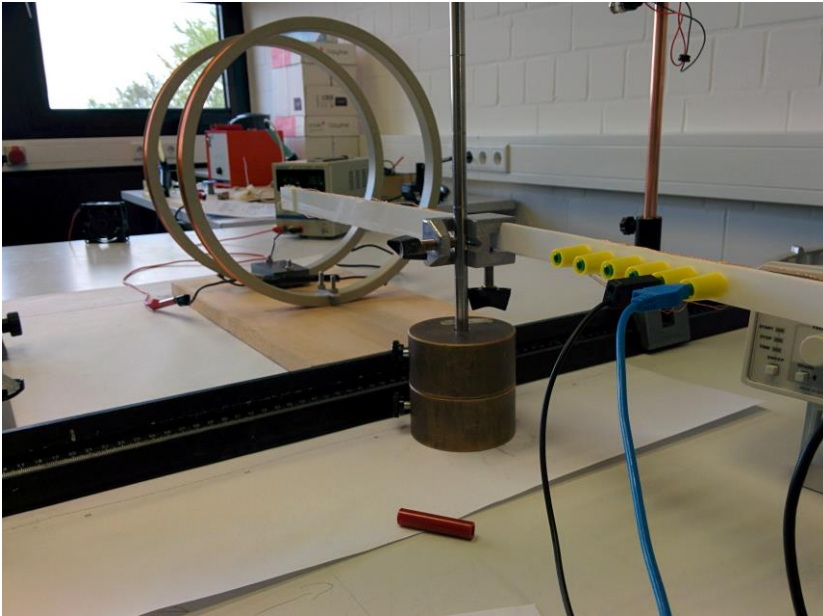
Fitted exponential law because

HALLSENSOR

- Last week: Soldering, gluing and testing



HALLSENSOR

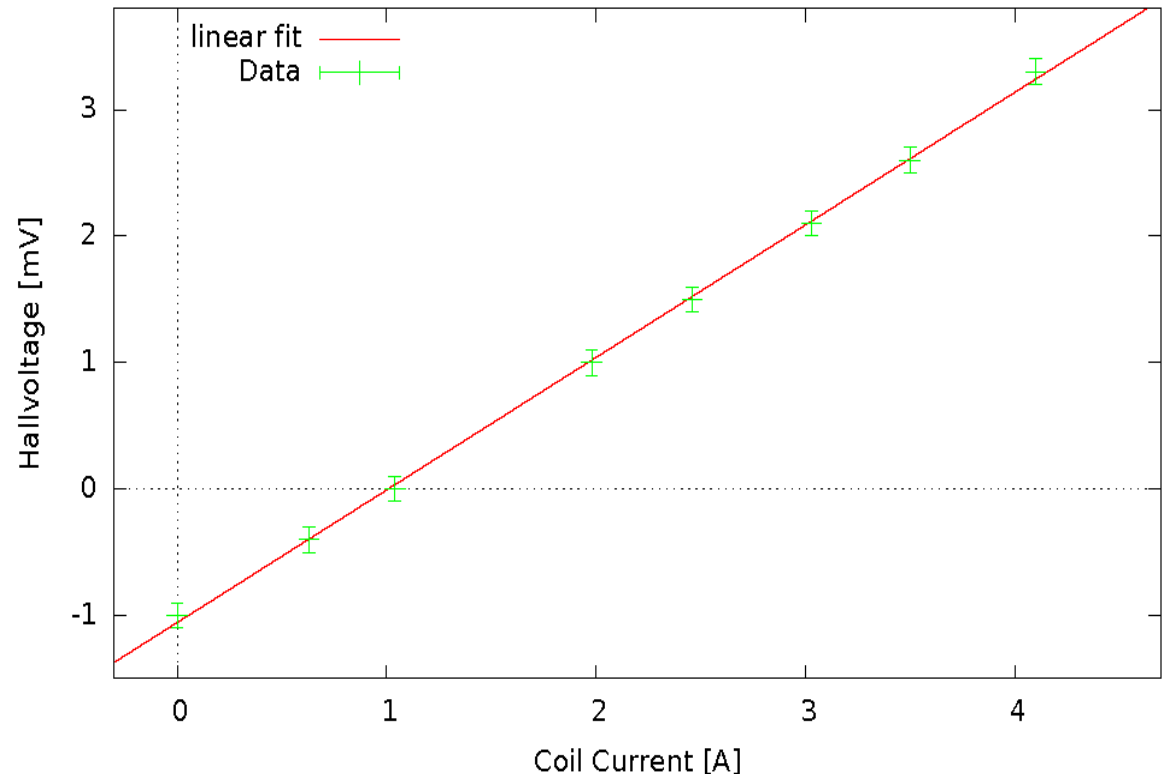


HALLSENSOR

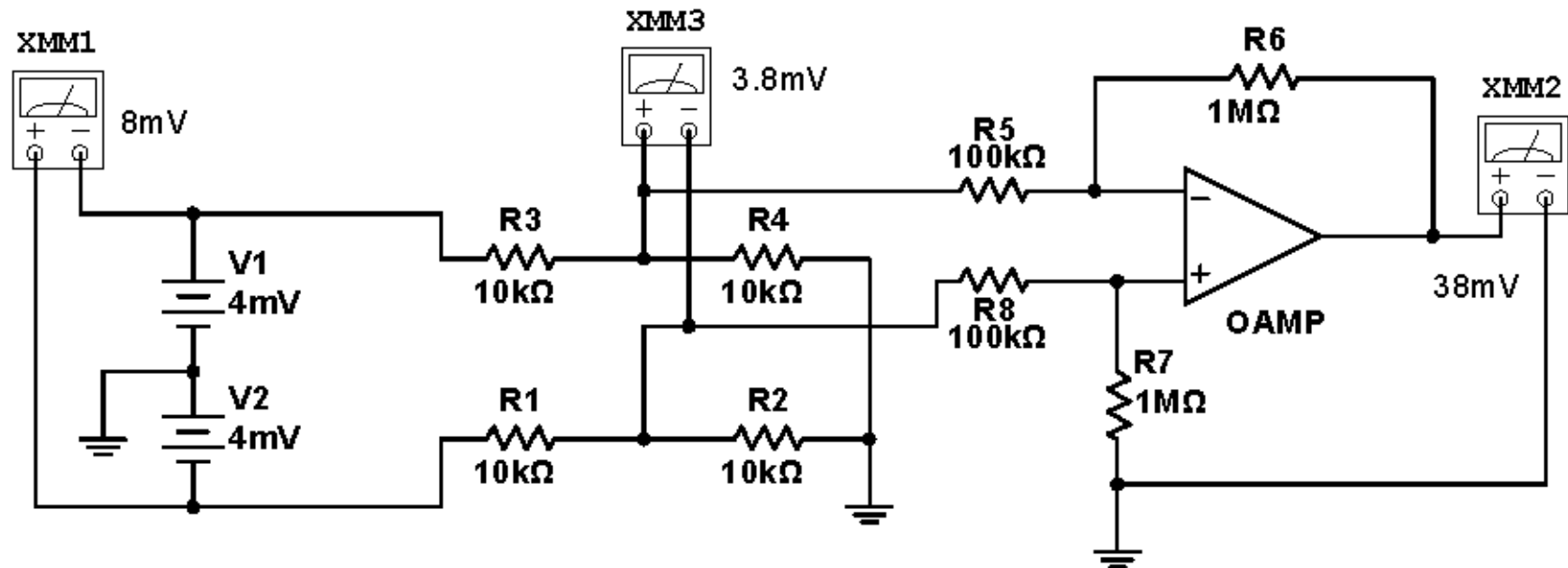
- Now: All soldering and gluing finished
- all three Sensors work, while measuring the magnetic Field in a Volume of about $(2 \times 2 \times 2) \text{ mm}^3$
 - Supply current flows and is constant over time (with Hameg power supply)
 - Hall-voltage is measured at all sensors in presence of magnetic fields
 - Linearity between magnetic field and hallvoltage is given, but the accuracy is still too low (next page)

LINEARITY CURRENT IN COILS VS HALLVOLTAGE

- Hall voltage is linear to the current in the coils, which is linear to the magnetic Field
- High relative errors due to the accuracy of the DMM



TO DO: AMPLIFYING THE VOLTAGE



Spannungsteiler zum halbieren der Spannung

POSITIONING THE SENSOR

- We fixed two optical banks on the table, aligned them orthogonally, and adjusted lasers, so that the beam horizontally

