10 March 2023

Plots for ESR experiment

1 ESR A. PLOTS LIST.

As stated in the instructions, we define k by

$$k = \frac{H}{I}$$

Where H – is the magnetic field, I – is the current. **Think about units. What would be your expectation?**

Measure k in three different ways:

1. In the first method plot the absorption signal and modulation against time at the same panel for the minimal modulation required to see the resonance.
2. In the second one (by direct current), you need to demonstrate that the absorption signal does not change with modulation.
3. In the third you first need to understand how XY scope mode works. Then by playing with DC current archive symmetric figure. Plot it.

2 ESR B. PLOTS LIST.

- Plot of the derivative of the absorption as function of the DC current.
- Do a numerical integration by

```
scipy.integrate.cumtrapz(y, x=None, dx=1.0, axis=-1, initial=None)
```

function description is here.

- Plot the absorption line as a function of the direct current.