



Introduction

The Zeeman effect is the splitting of spectral lines of atoms when they are placed in a magnetic field. It exhibits space quantization and is one of the few fundamental atomic physics experiments which can be performed in a teaching laboratory.

Experimental Set-up for Zeeman Experiment

The set-up consists of the following:

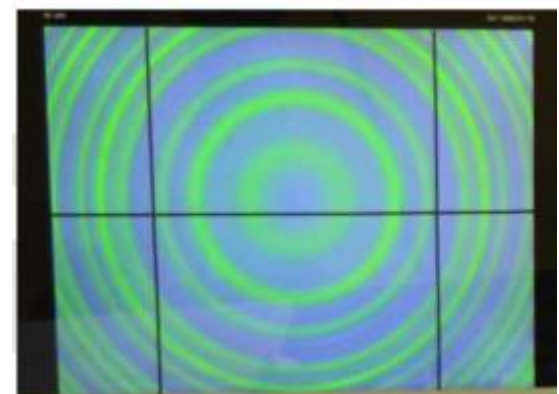
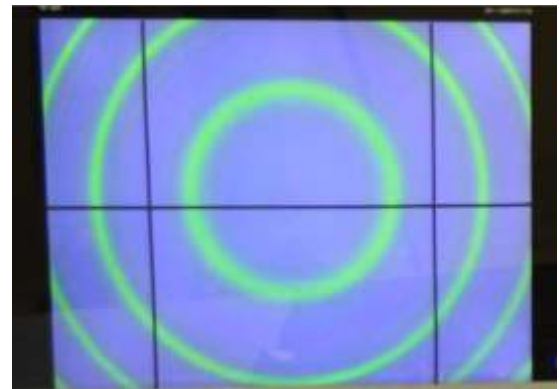
1. High Resolution Fabry Perot Etalon
2. Mercury Discharge Tube (Low Pressure Mercury Discharge Tube)
3. Power Supply (High Voltage Power Supply for Discharge Tube)
4. Narrow Band Interference Filter, IF-01 Central Wave Length: 546nm T_{max}: 74% HBW: 8nm
5. Polarizer with lens
6. Optical Bench
7. CCD Camera (High Resolution CCD Camera)
8. Telescope with Focussing Lens
9. Monitor 17
10. Electromagnet (Specifications as per datasheet)
11. Constant Current Power Supply, (Specifications as per datasheet)
12. Digital Gaussmeter (Specifications as per datasheet)

The experimental set-up is complete in all respect.

Result

The interference pattern is in the form of circular rings. These are split when the magnetic field is switched on.

The amount of splitting depends on the external magnetic field, charge to mass ratio of electron and Lande's g -factors of the electronic energy levels involved in the transition.



Note: Specifications are subject to change.

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