

Diode Laser Spectroscopy

Name:		Content		Presentation	
		Distribution	Given	Distribution	Given
Abstract	Description of what was done	1	3		
	Accomplishments including key numerical results with uncertainties	2			
	Critical thinking (See note 1 below)			1	2
	Readability (See note 2 below)			1	
Introduction	Discussion of relevant atomic structure of Rb	4	8		
	Discussion of Zeeman Effect	2			
	Motivation	2			
	Critical thinking (See note 1 below)			2	4
	Readability (See note 2 below)			2	
Experimental Procedure	Description of diode laser and optical layout for simple absorption measurements	4	12		
	Configuration and principle behind saturated adsorption measurements	6			
	Laser frequency calibration procedure and value	2			
	Critical thinking (See note 1 below)			2	4
	Readability (See note 2 below)			2	
Results and Analysis	Background subtracted annotated absorption spectra of fine structure	5	49		
	Annotated saturated absorption spectra of hyperfine structure	7			
	Expanded scans of the hyperfine structure in each absorption peak	5			
	Quantitative energy level diagram for ^{85}Rb with uncertainties	7			
	Quantitative energy level diagram for ^{87}Rb with uncertainties	7			
	Annotated saturated absorption spectra at different magnetic field strengths	7			
	Plot of the Zeeman splitting versus field with error bars	5			
	Determination of g_F with uncertainty	6			
	Critical thinking (See note 1 below)			2	4
	Readability (See note 2 below)			2	
Conclusion	Accomplishments	2	3		
	Improvements and future experiments	1			
	Critical thinking (See note 1 below)			2	4
	Readability (See note 2 below)			2	

Note 1: Logical progression, clarity, coherency and thoughtful style that demonstrates significance.

Note 2: Use of transitions, word choice, proper structure and grammatical correctness.

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Other	Figure and table captions with correct placement and text reference	2	7	
	Correct numbering of figures, tables, equations, and pages	2		
	Correct formatting for title, authorship, affiliation and date	1		
	Correct format for references with reference indicators in text	2		
Category Total		75		25
Report Total				
Final Score (with 10 point reduction if late)				

Date Due:

Date Received:

Overall Comments and Suggestions