

Double Groups and Quantum Dots - Literature Review

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Abstract—In this project, we investigate the photonic properties of quantum dots employing an approach analogous to standard procedures in studies of the topic. Experimental data from polarisation resolved photoluminescence spectroscopy are investigated using the theory of exciton complexes and group theory. The major features of the spectral diagrams can be labelled by exciton state transitions immediately by considering the properties of states of these exciton complexes. These major features also exhibit splitting caused by fine-structure spin interactions. This splitting is modelled using double groups, and agreement with polarisation and intensity of each resolvable peak is assessed. Predictions for dark and unresolved peaks are stated. Possible symmetry elevations in the quantum dot are discussed with consideration for their effects on the observed spectra.

I. INTRODUCTION

DDOUBLE groups are awesome

II. BACKGROUND MATERIAL

A. *gronp theory*

Imao

III. SUMMARY

anything

APPENDIX

FEEDBACK FOR THE 1ST CYCLE TWO-PAGE REPORT

”Decent in all categories - lab book had good recording of what you did. Fig captions should tell reader what to take away, not just what’s in the figure. Good description of method, numerical result and error all there - some attempt at error analysis.”