

Paralle Computing Project Report — Optical Pumping Simulation for ${}^7\text{Li}$ Atoms D1 Transition

Yu Lu (EID: YL25684)
Department of Physics
College of Nature Sciences
University of Texas at Austin

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1 Introduction

This section will describe the project, the physics behind and the logic will be followed by the simulation process. The physics of optical pumping will be explained and the importance of this simulation will be discussed.

1.1 Atom energy structure

1.2 Atom-Light interaction and selection rules

1.3 Optical pumping and transition matrix

1.4 Aim and importance of this work

2 Project

2.1 Code structure

2.2 Parallelization

3 Result and discussion

3.1 Parallel performance

3.2 Simulation result

4 Summary