

# **Contents**

## **Chapter 1: Introduction**

## **Chapter 2: Simulation**

- **Monte Carlo Simulation (Method)**

## **Chapter 3: Polarized Light Scattering**

- **Polarized Backscattering Images**
- **Numerical Model**
- **Stokes Mueller Formalism**
- **Stokes Vector**
- **Mueller Matrix**
- **Determining the Mueller Matrix**

## **Chapter 4: Description of Monte Carlo Simulation**

- **Launching a Photon Packet**
- **Photon Absorption**
- **Photon Scattering**

## **Chapter 5: Programming of the Monte Carlo modeling of light transport in multi-layered medium in standard C**

- **Flowchart of Monte Carlo Simulation**
- **The program in C (mcml.h, mcmlmain.c, mcmlio.c, mcmlgo.c, mcmlnr.c)**
- **Results (The output of the mcml program)**

## **Chapter 6: Implementation of the result of simulation in MATLAB**

- **2-d and 3-d view of the surface intensity map**
- **Conclusions**