# Usage Guide

## Overview

The LC Soliton Simulator provides a GPU-accelerated solver for LC director fields under applied voltage and optical fields.

## 1. Running a Simulation

Example: python examples/run_theta2d.py --Nx 128 --Ny 128 --xaper 10.0 --steps 500 --dt 1e-3 --b 1.0 --bi 0.3 --intensity 1.0 --mobility 4.0

## 2. Parameters

b: dimensionless electric strength; bi: optical torque factor. mobility: (4K)/(γ■ $d^2$), converts between model time and seconds. dt: integration step, typically 1e-3 to 1e-4 for stability.

## 3. Output Files

Each run produces .npz arrays with θ(x, y) or time-series data. Metadata is logged automatically.

## 4. Visualization

Use examples/plot_field.py to display or export results. Supports color maps and 2D intensity slices.