1. Motivation

- Realistic simulation of exchange interaction in coupled QD devices
- Interplay between device parameters and many-body physics in coupled QD
- Computational support for interpretation of experimental data

2. Model

- High-resolution grid
  - 1000,000 - 700,000 mesh points
- Cylindrical grid
- Hexagonal grid

3. Flowchart

- Kohn-Sham Equation
- Poisson Equation
- Exchange-Correlation Potential
- Two-particle Wave Function Equation

4. Coupled Lateral QDs

- Kohn-Sham Diagrams
  - Non-localities

5. Triple LCVDs

- Split Gate Structure (Essing)
- Flowchart Diagram
- Electron Charge
  - Electron Charge
  - Potential Profile
  - Electron Charge
  - Potential Profile

Spintronics/Electronics in Quantum Dots
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