

Position and the Free Particle

Emmanuel Flores

November 17, 2024

Advanced Mathematical Methods, Tufts University

Contents

1. The Position Operator
2. The Momentum Space Representation
3. Dirac Notation
4. Heisenberg uncertainty
5. The Propagator in Position Space
6. Propagators in frequency-momentum space
7. Green's Functions and Solutions to the Schrodinger Equations

The Position Operator

The Momentum Space Representation

Dirac Notation

Heisenberg uncertainty

The Propagator in Position Space

Propagators in frequency-momentum space

Green's Functions and Solutions to the Schrodinger Equations
