

Introduction

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January 18, 2023

1 Band theory

To arrive at the band theory, we assume:

- No relativistic effects (except when deriving pseudopotentials or calculating SOC);
- Born-Oppenheimer approximation: putting electron-phonon interaction aside
- Electrons don't talk to each other: leaving the Coulomb correction aside

Fermions in solid state physics include electrons and what derive from them, including holes and polarons.

2 Green functions