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# Chapter 2 – Survey of theoretical methods

## Hartree-Fock method

* Find cites and do reading

## Density Functional Theory (DFT)

### Bethe-Saltpeter

Text.

### Self-consistent field

Text.

### Hybrid functionals

Text.

### Gaussian basis sets

Text.

## Overview of available codes and their levels of theory

### Time-dependent DFT (TD-DFT)

#### NWChem

#### Orca

### Real-space multiple-scattering theory

#### FEFF

### GW/ BSE

#### Ocean

### Finite element

#### FDMES

### Non-DFT theories include multiplets

#### CTM4XAS

#### Quanty

## References