

# Modern Quantum Chemistry, Szabo & Ostlund

## HW

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## 2 Many-electron Wave Functions and Operators

### 2.1 The Electronic Problem

#### 2.1.1 Atomic Units

#### 2.1.2 The B-O Approximation

#### 2.1.3 The Antisymmetry or Pauli Exclusion Principle

### 2.2 Orbitals, Slater Determinants, and Basis Functions

#### 2.2.1 Spin Orbitals and Spatial Orbitals

Ex 2.1

$$\langle \chi_{2i-1} | \chi_{2i-1} \rangle = \langle \psi_i^\alpha | \psi_i^\alpha \rangle \langle \alpha | \alpha \rangle = \quad (2.2.1)$$