

# Modern Quantum Chemistry, Szabo & Ostlund

## HW

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## 3 The Hartree-Fock Approximation

### 3.1 The Hartree-Fock Equations

#### 3.1.1 The Coulomb and Exchange Operators

#### 3.1.2 The Fock Operator

Ex 3.1

$$\begin{aligned} \langle \chi_i | \hat{f} | \chi_j \rangle &= \chi_i | \sum_a h(a) + \sum_a \sum_{b \neq a} [\mathcal{J}_b(a) - \mathcal{K}_b(a)] | \chi_j \\ &= \end{aligned} \tag{3.1.1}$$