**Physics 4410
Quantum Mechanics 2**

Lecture 22

The Born-Oppenheimer approximation

October 19, 2020

1. Describe the Hamiltonians of coupled ions and electrons.

2. What is the Born-Oppenheimer approximation?

3. Describe the total eigenfunctions and eigenstates within B-O.

4. B-O is often used in conjunction with the variational principle. Describe the LCAO ansatz.

5. Summarize how the LCAO ansatz suggests that H_2 is a stable molecule.

6. Describe the hybrid orbitals in BH$_3$.