

PHY 741 – Quantum Mechanics

9-9:50 MWF Olin 107

Instructor: N. A. W. Holzwarth

Room: Olin 300

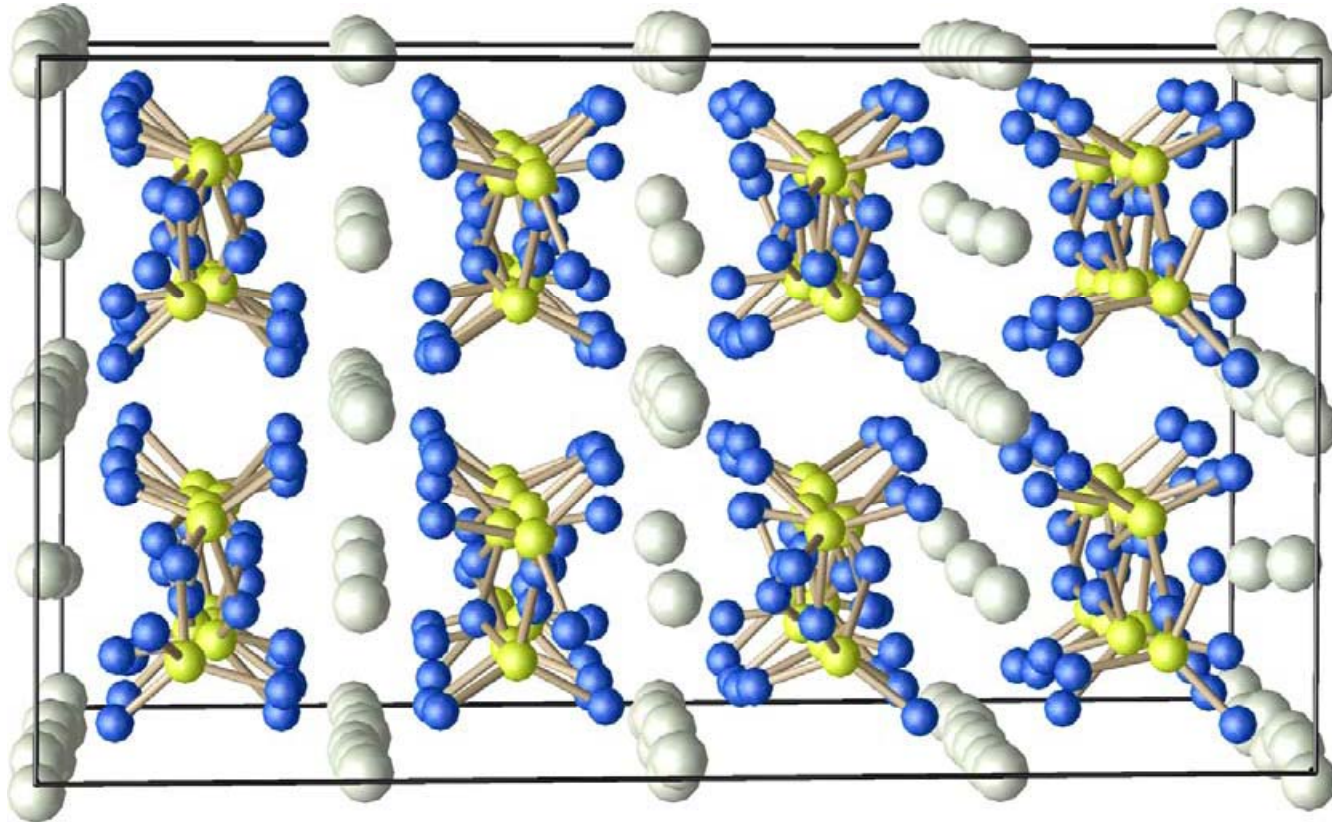
Today's lecture

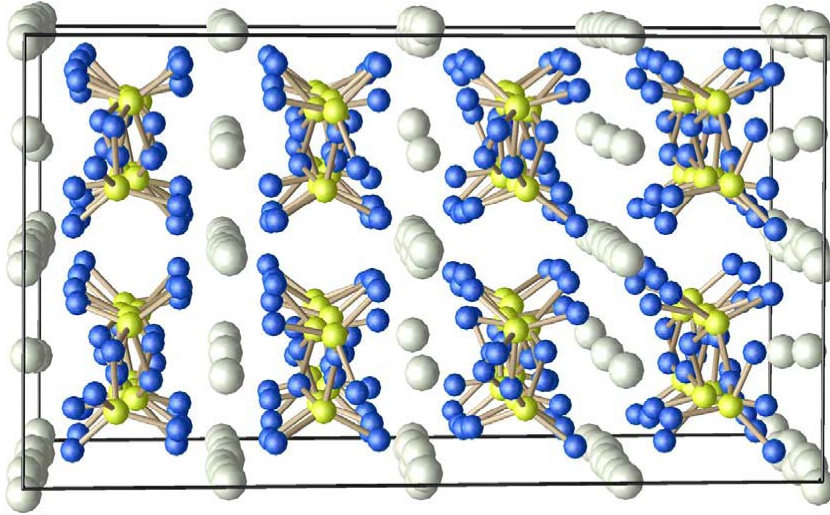
- Introduction & announcements
 - Class organization
 - Reminder about Physics Colloquium at 3:45 in Olin 101; refreshments at 3:15 in Olin Lobby
- Why Quantum Mechanics?
- Introduction to Maple

Why Quantum Mechanics (part 1)

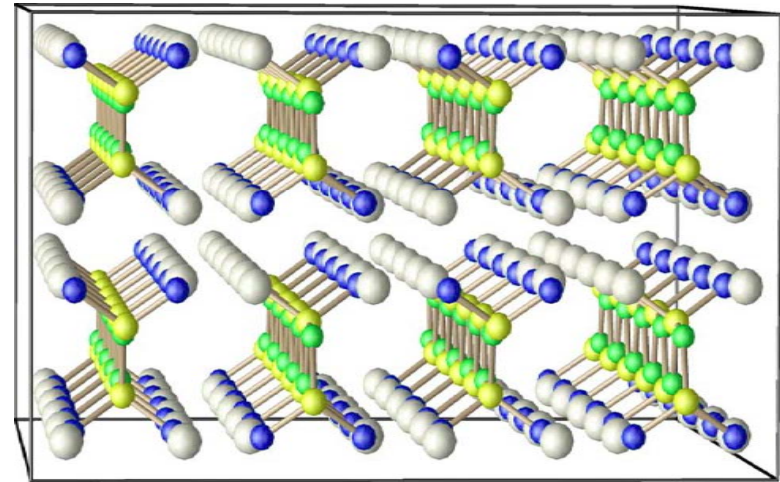
What does a practicing Quantum Mechanic do?

Example: Modeling properties of materials

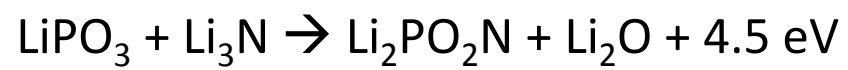
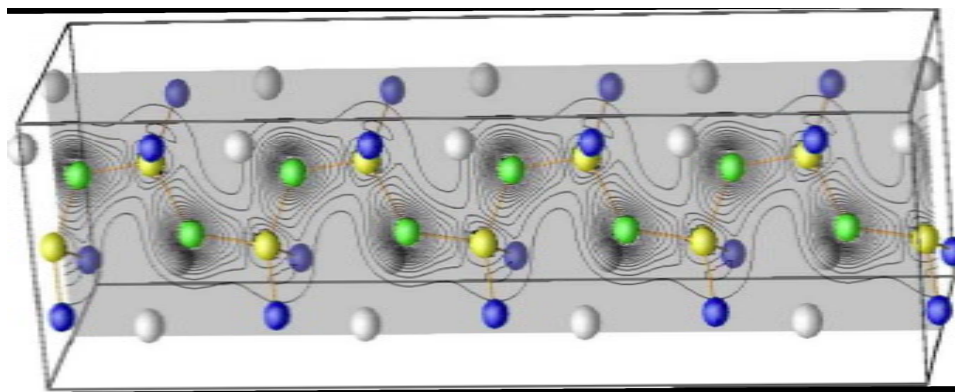




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Why Quantum Mechanics (part 2)

Classical Mechanics

- $r(t)$ – Trajectories of motion

Quantum Mechanics

- Probability amplitudes $\psi(r,t)$
- $\langle r \rangle = \int d^3r \mathbf{r} |\psi(r,t)|^2$

r == Hermitian operator