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Lecture 4

Work, Power, Energy

Python Concepts

- Introduction to loops for numerical integration (e.g., trapezoidal rule).
- Functions for calculating work, power, and energy.

Application

- Writing Python code to calculate the work done by a variable force (e.g., spring force) using numerical integration.
- Simulating energy conservation in a closed system (e.g., pendulum).
- Visualization: Plotting energy vs. time for the system.
- Homework: Modify the code to simulate a different system, such as a mass-spring system.