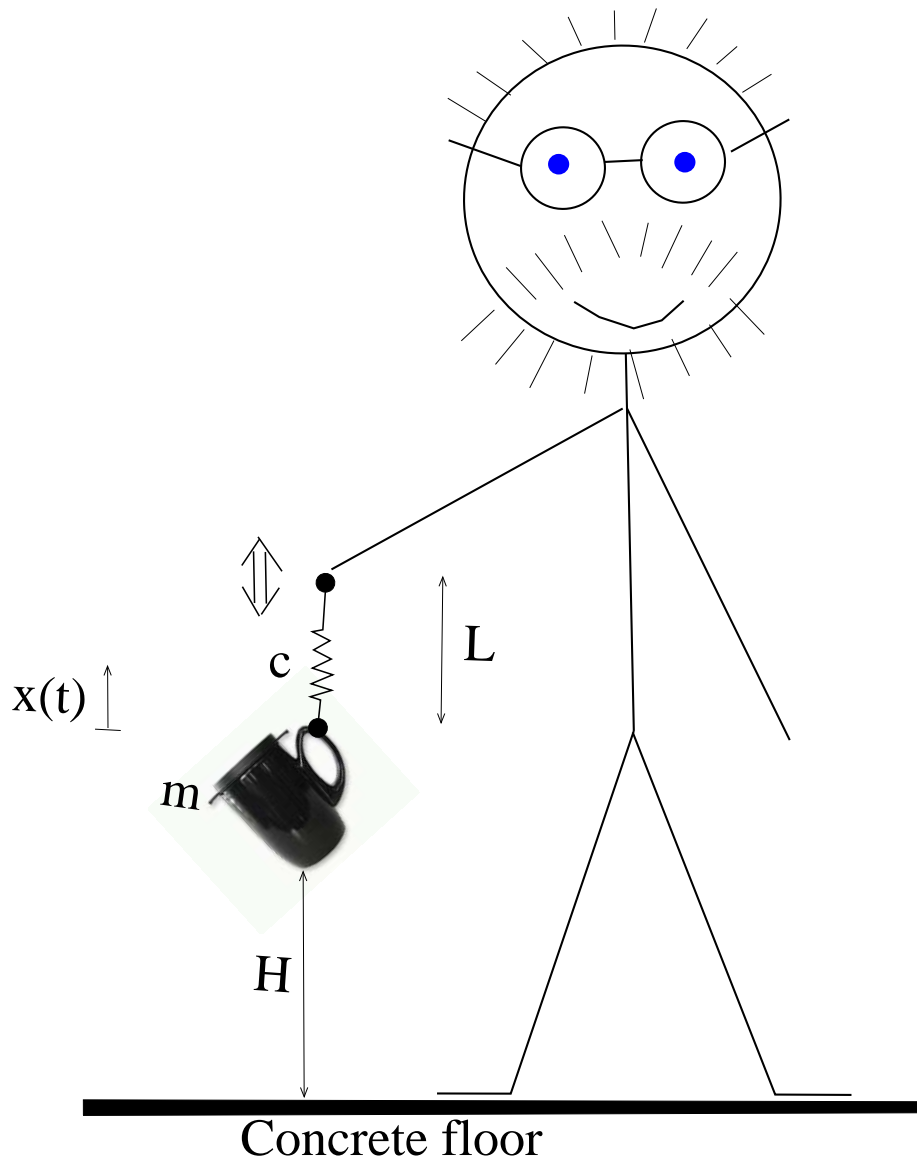
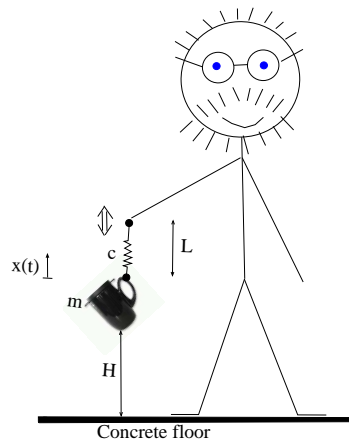


The experiment

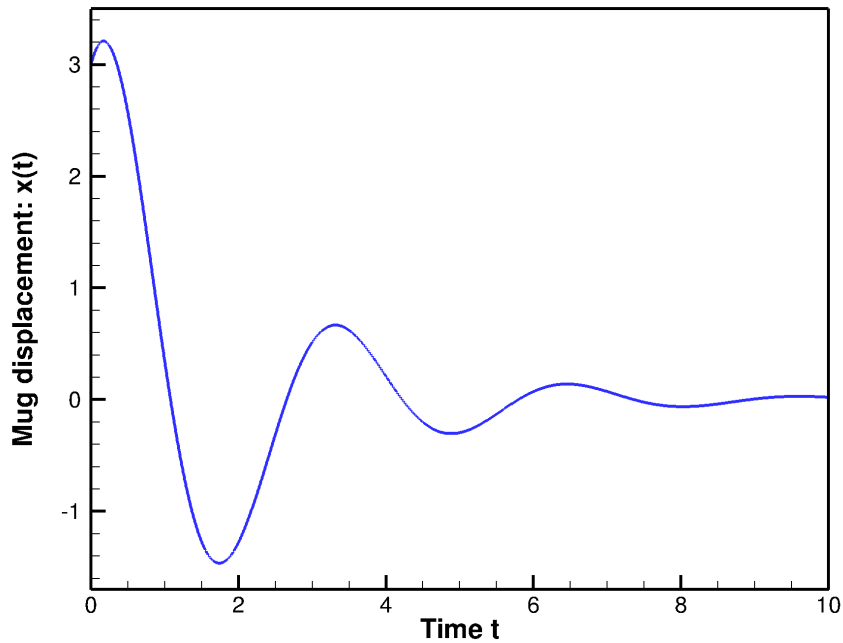


Experiment 1: Free oscillations



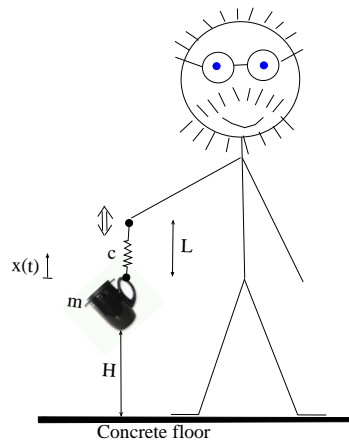
Procedure:

- Deflect mug from its rest position.
- “Let go” and observe the mug’s time-dependent motion while keeping hand still.



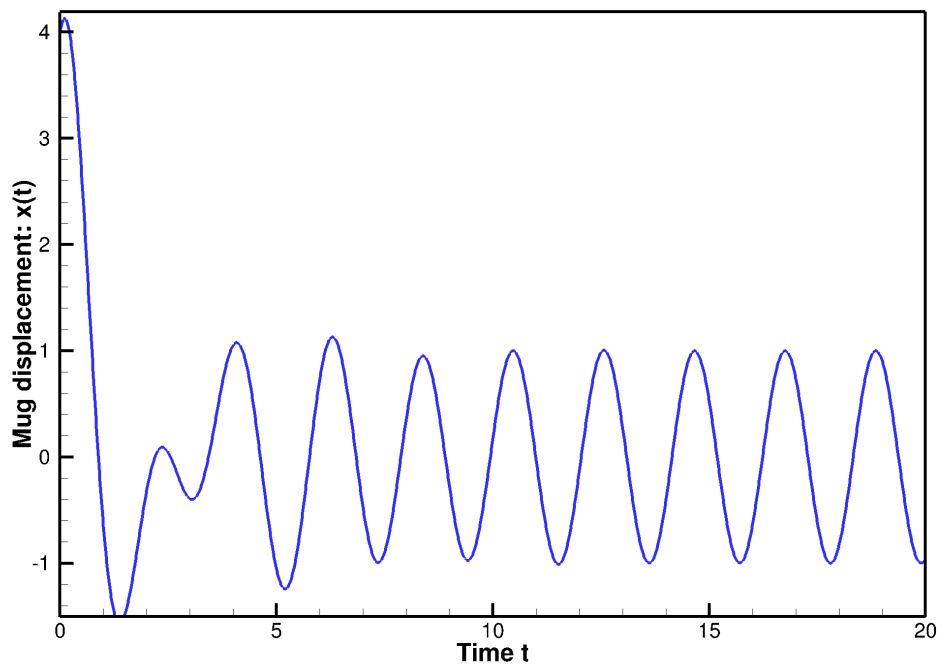
- Damped oscillation with certain characteristic frequency – the system’s “eigen” frequency.

Experiment 2: Forced oscillations



Procedure:

- Start from rest.
- Perform time-harmonic oscillations with hand and observe the mug's time-dependent motion.



- “Initial transients”, followed by time-harmonic “response” with same frequency as “forcing”.
- Note: Amplitude of “response” depends on forcing frequency:
 - tiny for high frequencies,
 - same as forcing amplitude for very low frequencies,
 - very large for frequencies near the system’s “eigen” frequency.