Oscillations

AP Physics C: Mechanics · Vocabulary in context

Word	Example
Simple harmonic motion /ˈsɪmpl hɑːˈmɒnɪk ˈməʊʃn/	**Simple harmonic motion** repeats back and forth, like a spring.
periodic motion /ˌpɪərɪˈɒdɪk ˈməʊʃn/	A swinging pendulum shows **periodic motion**.
equilibrium /ˌiːkwɪˈlɪbrɪəm/	At **equilibrium**, the oscillator's restoring force is zero.
restoring force /rɪˈstɔːrɪŋ fɔːs/	The spring gives a **restoring force** towards the middle.
differential equation /ˌdɪfəˈrenʃl ɪˈkweɪʒn/	A **differential equation** links a quantity and its rate of change.
angular frequency /ˈæŋgjʊlə ˈfriːkwənsi/	The **angular frequency** is 2π times the frequency. 2π
period /ˈpɪərɪəd/	The **period** of the wave is 0.02 s. 0.02 s
frequency /ˈfriːkwənsi/	A **frequency** of 50 Hz means 50 waves every second. 50 Hz 50
amplitude /ˈæmplɪtjuːd/	Loud sounds have a large **amplitude**.
phase constant /feɪz ˈkɒnstənt/	The **phase constant** tells us where the oscillation starts at $t = 0$. $t = 0$
natural frequency /ˈnætʃərəl ˈfriːkwənsi/	A swing has its own **natural frequency**.
resonance /ˈrezənəns/	**Resonance** makes the swing go very high.

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physical pendulum /ˈfɪzɪkl ˈpendjʊləm/	A swinging metre ruler is a **physical pendulum**.
small-angle approximation /smɔːl ˈæŋgl əˌprɒksɪˈmeɪʃn/	The **small-angle approximation** says $\sin\theta \approx \theta$ for small angles in radians. $\sin\theta \approx \theta$。
simple pendulum /ˈsɪmpl ˈpendjʊləm/	A **simple pendulum** is a small mass on a string.
torsion pendulum /ˈtɔːʃn ˈpendjʊləm/	A **torsion pendulum** twists back and forth on a wire.