What is the relationship between the damping coefficient of a spring-mass oscillator submerged in different liquids and the densities of the liquids?

Physics HL

Internal Assessment

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1 Introduction

This essay extends the investigation of simple harmonic motion by studying the damping coefficient and force of a damped oscillator submerged in water. Controlling damping through density is important in real-life systems ranging from shock absorbers to the stabilization of automobiles. The setup of the experiment consists of mainly a spring-mass oscillator submerged in a glass cylinder of liquid.

1.1 The Research Question

How Accurately Can Stoke's Law Estimate the Damping Coefficient of a Spherical Spring-Mass Simple Harmonic Oscillator Submerged in a Liquid?