

Determination of the gravitational constant / Computerized Cavendish balance 1.3.09-11



What you can learn about ...

- Law of gravitation
- Free, damped, forced and torsional oscillations
- Moment of inertia of spheres and rods
- Steiner's theorem
- Shear modulus

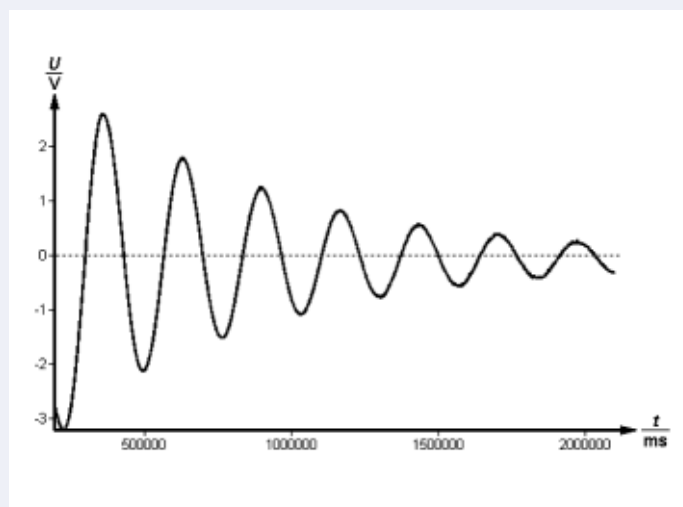
Principle:

Two small lead spheres are positioned on a beam, which is freely suspended on a thin metal wire. At the beginning the large lead spheres are positioned symmetrically opposite to the small spheres in that way that the attractive forces are eliminated. Thereafter, the large spheres are swung so that they are close to the small spheres. As a consequence of the gravitational attracting force the beam with the small spheres now moves in a new equilibrium position, where the attractive forces are equivalent to the force of the torsion of the wire. The gravitational constant can be determined from the new equilibrium position.

What you need:

Cavendish balance, computerized	02540.00	1
RS232 data cable	14602.00	1
Circular level	02122.00	1
PC, Windows® 95 or higher		

Complete Equipment Set, Manual on CD-ROM included
 Determination of the gravitational constant /
 Computerized Cavendish balance P2130911



Output voltage of the free and damped oscillating Cavendish balance.

Tasks:

1. Calibration of an angular detector.
2. Determination of the oscillation time of a free and damped oscillating torsion pendulum.
3. Determination of the gravitational constant.