

The Physics Experiments of Robert Wichard Pohl (1884–1976)

For decades, Robert Wichard Pohl taught his famous lectures of introductory physics in the old lecture hall of the Physics Institute at Goettingen University. These lectures became the foundation for three volumes entitled „Introduction into Physics“. Now, using Professor Pohl's original instruments in the same lecture hall in which he taught, this set of videos captures his extraordinary ingenuity and once more brings to life Pohl's great experimental skills.



Forces in an electric field

Video title: Forces in an electric field

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Series title: The Physics Experiments of Robert Wichard Pohl (1884-1976)

Abstract: Between two surfaces separated only by a small gap, small voltages can lead to appreciable forces

Source: Pohl's Einführung in die Physik - Elektrizitätslehre und Optik. Lüders, Klaus; Pohl, Robert Otto (Hrsg.) 22. Aufl., 2006, Springer Berlin Heidelberg New York; p. 12, 50

Key words: Voltage, electric field, forces

Goal of the experiment:

The demonstration of appreciable forces in the presence of small electrical voltages.

Experimental setup:

A stone with a flat surface rests on a brass plate. One terminal of a 460 Volt power supply is connected to the brass plate, the other is connected to the stone, through a protective resistor and through the experimenter.

Experiment:

The experimenter touches the stone, and thereby closes the circuit. He can now lift the brass plate together with the stone. Stone and brass plate touch each other only in a few spots, and between those are extended regions with small gaps, and hence large electric fields leading to the attractive force.

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