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.

Induction in conductors at rest

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Abstract:	A changing magnetic field generates an electric field
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Goal of the experiment: Using an induction coil that surrounds a solenoid, the electric field is explored that is generated when a magnetic field changes. The experiment also gives information about the distribution of the magnetic field along a long solenoid.

Experimental setup: The current in the solenoid can be turned on and off. The voltage pulse that is generated in the induction coil surrounding the solenoid is measured with a calibrated ballistic galvanometer.

Experiment: As the current in the solenoid is turned on and off, the induced voltage pulse has the same magnitude, but only changes its sign. It is also (not shown) proportional to the current, and is (also not shown) independent of the time rate of change of the current. These observations form the basis for Maxwells Law of the electromagnetic induction. It is also shown that the induced voltage pulse has the same magnitude as the induction coil is moved close to the end of the solenoid. Only at the very end does the voltage pulse decrease to half its value. It follows from this observation that the magnetic field of a stretched solenoid is uniform until close to its end.

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