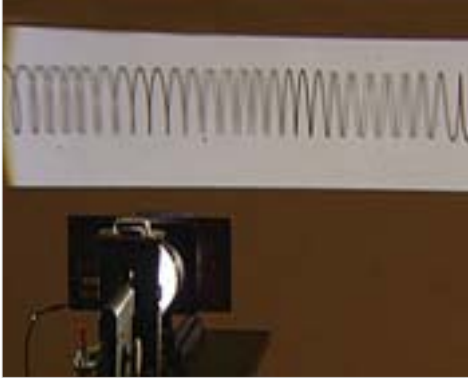


The Physics Experiments of Robert Wichard Pohl (1884–1976)

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.



Longitudinal vibrations of a helical spring

Video title: Longitudinal vibrations of a helical spring
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Series title: The Physics Experiments of Robert Wichard Pohl (1884-1976)
Abstract: Longitudinal standing waves can be excited on helical springs. Through optical projection, nodes and antinodes are made visible.
Source: Pohl's Einführung in die Physik - Mechanik, Akustik und Wärmelehre. Lüders, Klaus; Pohl, Robert Otto (Hrsg.) 19. Aufl., 2005, Springer Berlin Heidelberg New York; p. 191
Key words: Acoustics, helical springs, longitudinal vibrations, normal modes, standing waves

Goal of the experiment: Longitudinal standing waves can be excited on helical springs. Through optical projection, nodes and antinodes are made visible.

Experimental setup: A horizontally mounted small helical spring is projected onto the wall of the lecture hall. A standing longitudinal wave is excited by driving one of its ends with a door bell vibrating at one of the normal mode frequencies of the spring.

Experiment: In the projection, the nodes and antinodes of the longitudinal vibration are easily seen: In the nodes, the sections of the spring are motionless and thus clearly imaged, while in the antinodes they appear fuzzy.

Scientific Contributors:

Klaus Lüders	Department of Physics, Free University Berlin, Germany
Robert Otto Pohl	Laboratory of Atomic and Solid State Physics, Cornell University, Ithaca, USA
Gustav Beuermann	I. Physical Institute, University Goettingen, Germany
Konrad Samwer	I. Physical Institute, University Goettingen, Germany

Editor:	Walter Stickan
Camera:	Kuno Lechner
Assistant:	Verena Gruber
Sound:	Frank Polomsky
Video Editing:	Abbas Yousefpour
Technical Assistant:	Joachim Feist

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IWF Wissen und Medien gGmbH
Nonnenstieg 72, D-37075 Goettingen
Phone: +49 (0) 551 5024 0
www.iwf.de

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